

*The American Journal of*  
**CLINICAL  
MEDICINE**

Dependable Therapeutic Fact for Daily Use

JANUARY

MCMXVII

*A Doctor's New Year's Resolution*

**I** WILL earn my meal ticket on the square—this year and every year. Remembering that sixty minutes make one hour and one hundred cents one dollar, I will waste no man's time nor money, not even my own.

I will purge my heart of bitterness and fill it full of kindness, so that when I lie down in my bed at night I shall not be haunted by the faces of those to whom I have brought pain.

I will be deaf to the jingle of tainted money and the rustle of unholy skirts; when I look across the table at my wife, each night, I will do so with a clear conscience because I have nothing to conceal.

I will greet every day and its difficulties with a smile, and so I shall remain young enough to laugh with my children; and I will meet my troubles bravely and without flinching, and with the wisdom learned from battles won know how to be father confessor to those in distress.

I will press forward—never content to rest on my oars in the belief that the race has been won; always seeking to do better work, to be stronger more skilful and more useful. And now—HAPPY NEW YEAR.

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*The American Journal of*  
**CLINICAL  
MEDICINE**  
*Dependable Therapeutic Fact for Daily Use*

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## Concerning the Treatment of Diphtheria

THE energetic Health Commissioner of Chicago informs us that during the year 1915 there occurred in Chicago 5863 cases of diphtheria and that despite the glory of antitoxin 678 of the victims died. The cost for each case he computes at \$667. Surely it does not pay to be sick. Here endeth the first lesson.

The second lesson is, that antitoxin, as applied in the greatest American center of medicine, does not save all the stricken children, and this mainly because it is resorted to too late or administered in insufficient dosage. But, even in the face of these 678 deaths (most of which need not have occurred), the saving of life has been enormous, as compared with preantitoxin days, when from 25 to 40 percent died. In Philadelphia, for instance, the number of deaths from diphtheria is only a third of those in the old, preserum period.

There are three possible sources of diphtheria contagion not usually considered, namely:

Chicago has lavished many millions in the effort to secure pure drinking - water and has succeeded perhaps better than any other American city of the first class. We may lay aside this hypothesis of the etiology of the malady for this city.

Second, the germs of diphtheria tend to

become domiciled where there are favoring conditions for their nurture. Many an unsuspected nidus is to be found, for the searching, where for years unnumbered the disease may be lying in wait, like a serpent, for its little victims. The occurrence of an isolated case of diphtheria, when there has been no evident infection from any recognized source, should lead to a thorough investigation of the dwelling and its surroundings. This does not require an expert—any man of average knowledge and intelligence can find a fetid collection of filth under the leaky waste-pipes, wet, moldy woodwork under the floors, maybe dead rats. Just follow your nose, also the water-pipes.

A third method for the transmission of infection is less commonly suspected. The present writer has been called upon to explain the occurrence of diphtheria in a certain small town in the south. The water is supplied by an artesian well about 700 feet deep, and the analysis clears it from suspicion. The malady occurs in isolated farm-houses and dwellings, with no detectable foci of decomposing organic matter or existence of other sanitary defects. However, following the old southern custom, the privies are open, the fecal discharges are deposited on the ground, with not any protection whatever against

the access of flies, and at indefinite periods these dung-heaps are roughly removed with a shovel and carted away. Sometimes a little sprinkling of quick lime is given, but not uniformly. The protection of one's own privy by this means confers but very little protection if any one neighbor within fly-flight distance fails to take the same precaution.

The foregoing facts are worth consideration; but, do not forget that in 99 percent of the cases the contagion can be traced either to some one's sore throat, so mild, perhaps, as to be ignored. Or, also, it may be to that ubiquitous dangerous individual, the "carrier," who, without being sick, leaves behind him in the school, the church, the movie show, and the street-car a trail of illness, the source of which forever will remain a mystery. If we add the warning to 'ware the milkman, when other explanations fail, we shall have little excuse for putting the responsibility upon an "inscrutable providence."

We do not pretend to know everything. Our little stock of knowledge is but a feeble candle glimmer on the shore of the illimitable ocean of Truth; but, we are safe in urging that each community commence by protecting itself against diphtheria, by investigating the cases of simple "sore throats," looking for carriers, studying the milk supply, and then, if the prevalence of the disease does not cease, we may look further into its origin.

How long, O Lord, how long will it be before this lazy and stupid generation will arise to a sense of its true needs and rearrange its relations with the medical guild in accordance with modern conditions? Take the sum of \$6,569,207, which Doctor Robertson calculates the city to have paid out in 1915 for its quota of diphtheria, measles, and scarlet-fever. Allow one doctor for each group of 600 people, and we have 4167 physicians for Chicago's 2,500,000 inhabitants. Divide among that number the sum named, and each practitioner would have an income of about \$1577 from these three diseases alone. A good many of us in the field can not boast of such affluence.

Now, if each of these 600 persons were to pay (dependents by proxy) his physician a monthly salary of 50 cents, the members of our profession would be assured an income far in excess of their present earnings; and yet, everybody would have his health looked after from the standpoint of disease prevention, instead of waiting as nowadays, until he is stretched upon the bed of sickness.

And this would be at a cost well within the reach of all. The price of one glass of beer every three days would balance the average amount of doctors' bills, nursing, and drugs, besides preventing nine-tenths of the illness now prevalent. And, the medical profession, as a body, would, in comparison, be rolling in wealth. We have said all this before more than once—we purpose to keep on saying it, until at last it filters into and permeates the consciousness of some doctor or other—someone who will realize the practical importance of this scheme, and proceed to act upon it, even if only to oppose it and force its general consideration by open discussion.

All honor to King Antitoxin! He has saved many thousands of our little ones. In 1915, this remedy failed to save 678 in Chicago. But, we grudge this sacrifice to Moloch and want to save these 678 innocents, too. Let the knowledge of early diagnosis and of efficient antitoxin application be spread not only among the profession, but the laity as well, by every possible means—not forgetting the "movies." But, also, why drop all that we know about treatment before we had antitoxin? Some among us got good results with our older methods. These older remedies do not in the least interfere with the use of antitoxin.

There was one class of remedies to which we will revert once more (as we have "reverted" in days gone by), cures anciently applied with unquestionable benefit, in the treatment of diphtheria. We mean the application of germicides locally. The medical profession has always insisted upon viewing diphtheria as a general disease and refused to consider seriously its local treatment. Many years ago, there was an epidemic in Paris that baffled the profession. It was discovered that the best results were obtained by an old lay woman, so that finally the illustrious faculty sent a committee to ascertain her method. They found that she was swabbing the throat with a solution of silver nitrate.

The present writer has taken a child in the terrible later stages, when nose, throat, and mouth were infected and the stench of the discharges was horrible, washed out the infected tracts with a solution of hydrogen peroxide, applied a chlorine-carrying solution and had recovery follow in cases then, as now, deemed hopeless. The immediate relief following the removal of the fetid discharges was striking. Local applications can not get down into the follicles of the tonsils or reach the bacteria in the blood; still, how

do you know that the germs have penetrated there? And supposing they have, does not the science of bacteriology teach that their number counts and that, if we cut off their reinforcements, we can the better deal with those that have penetrated into the circulation?

The doctors of the period of thirty years ago found that chlorine was the most effective germicide in diphtheria. The great war has brought chlorine to the front as the most effective antiseptic agent, now known, displacing iodine and its predecessors, phenol and mercury bichloride. Suppose that we continue the use of antitoxin, in the most effective manner, but supplement it by chlorine in one of its newer and better forms. Maybe we yet could save some of those 678 doomed little lives.

"Old books, old wine, old friends are the best," said Oliver Goldsmith, noted for possessing all three, but withal a mighty poor business man. They say Oliver had more creditors in his day than any man in London. Most old things are not the best. If they were we would still be using candles, still buying crackers scooped from the floor instead of in sanitary packages, still cracking whips instead of shifting gears."—Printer's Ink.

#### HOW THE ANTINARCOTIC LAW IS WORKING OUT

At the last meeting of the Medical Editors' Association, held October 25 and 26 at the McAlpin Hotel in New York City, there was an exceedingly interesting symposium upon the narcotics problem. It is impossible to give even a brief outline of the interesting addresses delivered upon this topic. However, we were especially interested in the talk by Mr. B. C. Keith, chief of the Miscellaneous Division of the Internal Revenue Bureau in Washington. Very briefly, here are some of the facts presented in this address.

Mr. Keith said that 130,000 physicians, 40,000 dentists, 50,000 druggists, and 2000 veterinarians were licensed under the act. While much has been said about the arrests for violations of the antinarcotic law, the number actually has not been so very large. In round numbers, 100 regularly licensed persons have been arrested for its violation, and 700 unregistered persons; and of these about 80 percent have been convicted.

One of the most interesting features of the work of the bureau have been its investigations into the whole narcotics evil. The department was practically compelled to study the problem, by reason of the enormous number of appeals for help, more than ten thousand such appeals from narcotic-habitues

having reached the department by mail. Many of these victims who were cut off suddenly from their supply of narcotics were uncertain as to what they should do and became desperate when unable to secure a supply of the accustomed drug. All sorts of substitutes were resorted to by them; one person, for instance, was found who was masticating belladonna porous plasters, in order to secure the small supply of narcotic contained in it. Every imaginable subterfuge was practiced, to secure the needed narcotic, and, as a natural result, various illicit means of supply were developed. These instances were most prominent in the large cities, in which it still is possible for addicts to secure supplies through underground channels.

The source of the illegal supply of these drugs is not always easily discovered. It was ascertained, however, that certain houses were exporting narcotics and that these same drugs then were reimported and in that manner the law evaded.

It is to be regretted that, in a few instances, physicians had entered upon this illicit business. These men, as a rule, were individuals who had little practice or standing prior to the enactment of the law, and who used their prescription-writing privilege as a means of illegal gain. In one instance, reported by Mr. Keith, a physician who prior to the passage of the law had an income of less than \$50.00 a month, began to write prescriptions for habitués at such a tremendous rate that his practice mounted to \$1500 to \$2000 a month. Another physician, between March 1 and August 1, in 1915, wrote 15,000 prescriptions for narcotics. It is hardly necessary to add that physicians of this character soon found themselves within the toils of the law.

Some further peculiar conditions were uncovered. It was pointed out by Mr. Keith that hundreds and probably thousands of individuals have taken morphine for many years without exhibiting any visible evidence of injury to their health. Thus, for instance, one man, eighty-one years of age, was found who had been taking morphine for sixty-five years. He also told of a physician, a prominent surgeon in the middle West, a man who was doing several major operations every week, a man of excellent standing, who was found to be taking 60 grains of cocaine every day, and morphine in addition.

The presence of two or more addicts in one family was discovered quite frequently; as, for instance, in one family of five, three were found to be addicts, including the youngest,

a child of six months; and four such victims were discovered in another family of seven.

More women than men were found to be opium addicts, while more men than women use cocaine.

On the whole, the federal antinarcotic law is working well, and that it is doing great good no impartial man can doubt. Not of least importance is the fact that its enforcement by the strong hand of the nation in bringing this great social problem so vividly before us that we can no longer ignore it. The defects—and there are many—will be removed.

Now—when will the *nation* grapple with that much greater problem, the drink evil?

We are all egotists in sickness and debility. An animal has been defined as "a stomach ministered to by organs"; and the greatest man comes very near this simple formula after a month or two of fever and starvation.

—Oliver Wendell Holmes.

#### JACK LONDON

In the death of Jack London, America loses its most virile and, in many respects, its most characteristic writer of fiction. His theories of life were primitive and elemental, and, yet, paradoxically, typical of the new spirit of the times. He wrote most tellingly of the "primeval brute"—the man who at heart was a savage and who knew what he wanted and took it—but, Jack's idealism turned to the highly organized socialistic state, in which men would be really equal. He hated evil in all its forms. Probably no man ever has written more tellingly of the destruction wrought by drink than he has done in his autobiographical story, under the title of "John Barleycorn." A moderate drinker himself, he felt that drink is doomed and that it would be destroyed by the votes of women.

We feel a peculiar sense of personal loss in the death of Jack London, because he was a constant subscriber for *CLINICAL MEDICINE* and a faithful reader. He regularly sent us five dollars at three-year intervals; and that he enjoyed the journal was testified to by a letter addressed to the editor and received by us a little more than a year ago, in which he said:

"I cannot tell you how thoroughly I appreciate *CLINICAL MEDICINE*. I subscribe for many magazines, but, if I were cut down to five magazines, *CLINICAL MEDICINE* would be one of the five."

Praise from a man like Jack London is praise indeed, and it seems to us evidence

that we are instilling into the pages of this journal something of the virility, purpose, and true sincerity which were so manifest in his own life and in all that he wrote.

There was no veneer in Jack London's character or in his work. It was oak—gnarled and rugged, sometimes—but free from the dryrot of degeneracy and solid to the core. Books like "The Sea Wolf," "The Call of the Wild," and "John Barleycorn" will be read and reread when many of the polished inanities now posing as great literary masterpieces are dead and gone. He mirrored accurately in his books the life he knew.

You can make an enemy more miserable by tickling his feet with the feather of satire than by pounding him with the sledge-hammer of coarse abuse.—Puck.

#### THE GENERAL PRACTITIONER AND THE PUBLIC WEAL

We need not point out that *CLINICAL MEDICINE* always has stood up for the general practitioner. We believe, nay we know, that he is the backbone of the medical profession, and that it is he, and not a few theorists and scientists, who accomplishes the actual work for which physicians are responsible. We are quite accustomed to read sneering and slurring remarks about the shortcomings, the failings, the incompetence, and the ignorance of the general practitioner, and when we read that sort of thing we feel like setting down these wisecrack-knockers somewhere in the country, ten or twenty miles from any other physician, and forcing them to attend to all the multifarious wants and necessities of the people living there. It might be a sad thing for the people, but the overwise professor would gain a mighty wholesome respect for the general practitioner who attends to the work in these districts, and does it well. Thereafter, he would entertain a higher opinion of his confrère of the cross-roads practice.

How disastrous the results of purely academic reasoning can be, was made painfully evident last summer in the action of many health-boards with reference to infantile paralysis. The disease having been declared communicable from person to person, the most insane quarantine regulations were adopted and enforced and much unnecessary distress and suffering caused thereby.

It is all very well in matters pertaining to public health to secure the best advice to be had from specialists and research-workers, but, the final action of health-boards and of other authorities should be subject to the

counsel and direction of a wise, competent general practitioner of large experience and well-balanced views. It is to this general practitioner, and to him alone, as Beverley Robinson correctly points out in a recent number of *The New York Medical Journal*, that all others should, in the end, be subservient. He may not, in fact, he cannot, know as much in any particular line as do specialists and research-workers who have devoted years of study to it, but he has the advantage of being able to correlate with the whole question of public health, the information on any particular subject.

There is no one single thread or line of thought that can be followed; public health depends upon efforts in a great many different directions and, above all, upon the exercise of common sense and of feasibility in the enforcement of rules and regulations. Doctor Robinson claims that the wise practitioner should be the presiding judge, and, after weighing all the factors involved, he has acquired the information and determined its relative value in a way that can be done by no other physician. Therefore, in every health-board, in every hospital, among the specialists of the different disciplines, the presiding and controlling man should be an experienced, all around physician.

We are satisfied that the average small town doctor is a little better posted and a little more efficient in his work than the average city or hospital staff physician, specialism, of course, excepted.—William Brady, in "Personal Health."

#### STRYCHNINE—STILL THE GREATEST TONIC

While the laboratories have made the momentous discovery that strychnine is not a heart- tonic, that, rather, it is disposed to depress that busy organ, instead of helping it bear its burdens, the clinicians persist in finding this alkaloid a stimulant of pretty nearly every function of the human body, and of the heart especially. In one issue of a very highly esteemed contemporary, Professor Bush grudgingly admits that possibly strychnine may be advantageously employed as a spinal stimulant. But, the no less distinguished Professor Anders declares that in large doses strychnine is the most efficient cardiac stimulant known to medical science.

When authorities differ so diametrically, what is a poor doctor in the field to do? Apparently his best course is, to stick to the things he finds advisable, and to wait until the warring seraphim come to a satisfactory

conclusion. We may have to be satisfied that a remedy cures our patient and, yet, not know how or why it does so. The explanation finally decided upon may be absolutely the contrary of that upon which the therapeutics was originally based. Calomel may not act upon the liver, but it does something in cases we thought needed hepatic poking-up; if these prove to be instances where the bile-maker really needed quieting, we change our diagnosis but continue to give calomel for the same series of symptoms, and get the same old relief.

Now comes William Forsyth Milroy—if he isn't a professor, he ought to be—and tells us (in *The New York Medical Journal*) of his use of strychnine as a tonic. Twenty years ago, Pepper recommended strychnine as a remedy in tuberculosis, and the seed fell upon good Nebraska ground, and it bore fruit.

Doctor Milroy administers the strychnine in full doses, beginning with 1-30 grain a day, and adds 1-30 grain a day every five days, until eight thirtieths (8-30) grain is being taken each twenty-four hours; then he reduces the periodical increase to 1-60 grain daily, until the limit per day has been reached. This maximum dosage is indicated by the occurrence of muscular rigidity; this being most frequently manifested in the posterior muscles of the neck, then in the inferior maxillary muscles, sometimes in those of the front thigh. When this occurs, the doses are slightly reduced, until the rigidity disappears. Of course, the toleration of the drug varies. On this point—he says: "I have given a woman weighing 110 pounds one grain daily for five days, with no toxic effect."

His results in tuberculosis are "sometimes almost beyond belief." Quite naturally the method has received more attention in Europe than among his compatriots, and he quotes from French, Swiss and Cuban sources.

Some neuroses also are beneficially influenced by strychnine in high dosage. Hartenberg has reported favorably on its use in neurasthenia (2-3 grain daily); also in neural maladies leading to hypotonia, ataxia, cachexias; and also in convalescence. Troisfontaines succeeded with it in syphilitic myelitis, alcoholism, collapse, and edema of the lungs. Milroy has learned, by his experience, to rely upon it in the edema supervening upon pneumonia, where he injects 1-6 grain, repeating as may be required.

Discussing its mode of action, Milroy says: "It results in a stimulation of the physiological activity of practically the whole body. Admitting that cardiac muscular power and

blood pressure are not influenced by strychnine, the fact nevertheless remains that the heart-action is influenced favorably in certain conditions. It is difficult to believe that the benefit of its use, so long and by so many observers, is all imaginary."

In his great work on clinical medicine, Trousseau tells of administering, with benefit, strychnine, in epilepsy, up to one grain a day. Few modern therapeutists have enough faith in drugs nor sufficient nerve to push a powerful toxic agent to its full action, but those who do this get results that count. And, by the same token, they get an idea of "dosage to effect"—which means, doses that would make the Pharmacopoeia-slave flat dead from fright.

The present writer has a word to add to the foregoing. Many years ago, he began his professional work as resident physician in an insane-asylum. There was one ward containing some thirty terminal demented—absolutely hopeless cases, long past the curable stage, where the mania of the early years had subsided into stupidity. Many of these men did not even acknowledge the doctor's salutation by a nod or an upward glance, while some had to be fed by hand. They lay about the floor, like hogs, in a puddle. To these men, we gave strychnine, directing the nurse to increase the doses until it "did something." How high the doses went, we never knew—nor greatly cared—but, after a few weeks, two of these men began to show signs of returning life. They were taken to a convalescent-ward, into the open air, set to work on the farm, and eventually both recovered and returned to their families.

In all our professional career, there are few things of which we feel as proud as of those two recoveries.

"Mind your own business and in time you'll have a business of your own to mind."

#### POLLY OH, NOT POE LYO

Dr. Robert T. Morris writes to *The Medical Record* to call attention to the current mispronunciation of the term "poliomyelitis." The first "o" is in the Greek an omicron, not an omega, and should be rendered short, as in Polly. As to the termination there is an irreconcilable conflict between the authorities. We went to Boston several years ago fully expecting to hear this English suffix pronounced in English; but our ideals were shattered, for not once, at the meeting of the American Medical Association, did we hear the long "i" pronounced as "i"; but, as

Morris puts it, as the "ee" in muskeeter. (Please, Mrs. Proof, let that go as writ—it's intentional.—You see our proofreader is Meth-odical, and takes life seriously.)

Doctor Morris's letter to the *Record* is one of those killingly funny lucubrations that emanate from him occasionally—but the funniest part of it is left out. We are credibly informed that the letter went first to a journal presided over by an editor who was brought up from infancy on Sanford and Merton and kindred flights of leaden-winged Pegasus, and he objected that some readers might be affronted by the expression—"the differences between doctors and educated people!"

Success is for all who are willing to pay the price of admission, but there are no complimentary tickets.

—A. Pike.

#### WHAT IS THE BEST ANTIDOTE FOR MERCURIC-CHLORIDE POISONING

Many readers of *CLINICAL MEDICINE* will remember an article contributed to this journal by Dr. Thomas A. Carter, of Chicago, in the issue for April, 1914. In this paper, Doctor Carter presented for the first time an antidote for poisoning with corrosive sublimate, or mercuric chloride. At that time, he had treated nine victims, of whom seven had survived. This antidote consists of 10 parts of sodium phosphite and 6.6 parts of sodium acetate. It was placed on the market by a Chicago firm, and large numbers of these tablets have been used, apparently with success, in the treatment of a considerable number of cases of serious poisoning with corrosive sublimate.

In view of the importance of this problem and the numerous cases of poisoning of this kind that physicians are being called upon to treat, we are interested to learn of a careful experimental study made by Dr. Bernard Fantus, professor of pharmacology and therapeutics in the College of Medicine of the University of Illinois, of the various antidotes suggested. An account of his observations appears in the September, 1916, number of *The Journal of Laboratory and Clinical Medicine*.

Doctor Fantus investigated the antidotal action of stannous chloride, sodium bicarbonate, egg-albumen, calcium sulphide. Hall's antidote (potassium iodide and quinine), sodium acetate, sodium phosphite, and sodium hypophosphite; the latter two being tried singly and in combination with the sodium acetate, while hydrogen peroxide was given in association with sodium hypophosphite.

His experiments were conducted with dogs and rabbits; however, dogs vomit so easily and mercuric chloride is so irritating to the stomach that with these animals uniform results could not be obtained. Consequently, rabbits were principally utilized, their inability to vomit insuring retention of the poison.

The conclusions arrived at by Doctor Fantus, as a result of these experiments, were most interesting. Contrary to popular belief, egg-albumen was found to be of little value as an antidote for the mercuric chloride, unless it is given immediately after the poison is swallowed. Milk and serum-albumen are worthless. The same is true of Hall's solution, sodium carbonate, sodium sulphate, and potassium bitartrate. Sodium bicarbonate, sodium acetate, and possibly stannous chloride have a very moderate antidotal value. Calcium sulphide, if given in doses large enough to exercise any possible antidotal action, was found to be too toxic to rabbits to be worthy of consideration.

In contrast with these unsatisfactory results, the benefit following the administration of sodium phosphite or hypophosphite was exceedingly marked. Doctor Fantus made extremely careful tests with Carter's antidote, which, as stated, consists of a mixture of sodium phosphite and sodium acetate. The sodium phosphite given alone, either together with the mercuric chloride or following its administration, was found to be practically devoid of antidotal action. However, when the sodium phosphite and the sodium acetate were combined in the proportions designated by Carter, a very striking antidotal effect was obtained—an effect which manifested itself, not only when the antidote was given simultaneously with the poison, but also subsequent to its administration; in fact, the average fatal period, in rabbits was lengthened to sixty-one and six-tenths days when the poison and antidote were given combined, and to forty-two and two-tenths days when the antidote was given afterward.

Upon this fact Doctor Fantus comments: "Why the combination in the proportions stated should be so much more effective than the same combination with an excess of acetate, which in itself has antidotal value, I am unable to explain."

Believing that, theoretically, sodium hypophosphite should be a better reducing agent than sodium phosphite, Doctor Fantus thought it deserving of careful trial. He found it somewhat slower in its action than the phosphite in reducing the mercuric

chloride to calomel, but the results obtained were constant, indeed, even more constant than those from the phosphite of sodium. A somewhat lower average of survivals was obtained with sodium hypophosphite than with Carter's antidote; in other words, thirty-seven and six-tenths days, as compared with forty-two and four-tenths days from Carter's combination. However, Doctor Fantus believes that the hypophosphite and acetate combination ranks well alongside of the phosphite combination.

Slightly better results were obtained when the sodium hypophosphite was combined with hydrogen peroxide. Just why this particular combination should have this beneficial effect Doctor Fantus cannot explain, although he conjectures that the hydrogen peroxide may act as a catalyzer.

As a result of his studies, Doctor Fantus recommends as antidotal treatment in a case of mercuric-chloride poisoning the immediate administration of Carter's antidote—"a tablet composed of sodium phosphite, 0.036 Gram, and sodium acetate, 0.24 Gram." If this is not available, he would give the following:

|                                 |        |
|---------------------------------|--------|
| Sodium hypophosphite.....       | 1 Gram |
| Water.....                      | 10 mls |
| Hydrogen-peroxide solution..... | 5 mls  |

In this connection, he points out that the quantity of the hydrogen-peroxide solution administered must be carefully determined, inasmuch as, when an excess of it is administered in association with the hypophosphite, the results are much less favorable.

Naturally, we are greatly gratified to learn that the method of treating mercuric-chloride poisoning with Carter's antidote, first presented to the medical profession through the pages of *THE AMERICAN JOURNAL OF CLINICAL MEDICINE*, has received the endorsement of such a careful investigator and thoughtful therapist as Professor Fantus. His final recommendation, that the antidotal treatment should be combined with eliminant treatment, as recommended by Lambert and Patterson, is, of course, sound and should be endorsed. For this purpose, he recommends that sodium acetate be employed in preference to potassium bitartrate, because of the superior antidotal value of the former.

Carter's antidote has been tested in the hard school of clinical experience, and it has been found satisfactory. Doctor Carter has reported the treatment of 74 cases of mercuric-chloride poisoning with this remedy, and *with only 4 deaths*. When it is recalled that many of these cases were seen long after the

poison was ingested, the remarkable value of the antidotal treatment which he introduced will seem even more strikingly apparent.

Could we judge all deeds by motives  
That surround each other's lives,  
See the naked heart and spirit,  
Know what spur the action gives,  
Often we would find it better  
Just to judge all actions good;  
We should love each other better  
If we only understood.

—Rudyard Kipling.

#### A LESSON FROM GERMANY

Whatever else she will have accomplished in the long run, Germany has, at least, awakened the world. She is teaching us anew the arts of war and of peace and shows how these are intertwined so that all the forces of a vast empire may be organized and combined for the accomplishment of a single purpose.

The world follows slowly—as slowly as it possibly can. But the upheaval has disrupted the old conditions and the glacial progress of the past is replaced by a general commotion, in which new ideas have such an opportunity as never before. The innovator gets a hearing. The iconoclast is not necessarily a community peril. The disturber is not condemned offhand as a knave or a fool. Men who have long advocated improvements find an audience willing to be convinced or at least to take a gambler's chance and give the suggestions one trial. The public is not swept bodily from its moorings, but it is mobile, at any rate, and swings with the tide.

One of the most successful of our innovations is, the medical inspection of school-children. Astonishing are the results already achieved. Many a child who has been condemned as stupid or whipped for faults, has been shown to have a pathological basis for its derelictions—it did not get its lessons, because it could not hear the teacher or see its books, it was dull from adenoids, intoxicated from pus-foci, handicapped by disease transmitted from ancestry or absorbed from insanitary surroundings, at home or in the school itself.

The number and variety of physical defects revealed by investigation is amazing. Twenty-five percent of all school-children are asserted to have scoliosis; an equal number have bad eyesight; five percent have defective hearing; three percent suffer impediments of speech. Some estimate the feeble-minded at four percent, which would make 800,000 in the country at large, of whom 100,000 are so badly mentally affected as to

deserve treatment in institutions. And, yet, school inspection is a very new affair and the medical profession is only beginning to acquire a practical education upon it. The methods and their application still are experimental—then what may not be the results when study and experience have developed them?

Immense as are the benefits to be derived from inspection of the schools and the attending children, this is but a beginning. The place for such work is the home. How much better if every family were under the sanitary supervision of a particular doctor who is paid a salary for doing his uttermost to keep people well. Why wait for the child to fetch to its fellows at school the evils of a bad hygienic environment, a vicious moral environment, in its home? There is a certain sense of opposition to the "public doctor," as every man who has acted as vaccine-physician knows; but, every poor family takes a certain pride in "our own doctor" that makes his work as easy as that of the municipal official is hard.

The detection of disease-carriers and their segregation from other children constitutes a great advance; but, far better inspect the home conditions that permitted the development of typhoid fever or diphtheria or dysentery or any other impartable malady. Why run the risk of a child bringing typhus to school with its lice, or plague with its fleas, or why allow a malarial man to infect the mosquitoes and so ruin the health and the sanitary reputation of an entire community? The cost of the Armageddon would not represent the monetary injury done to the South by its designation as "the malarial belt." The ticks of the region of the Bitter-Root River ruined the promoters of an irrigation project undertaken by them.

One reason why talk is so cheap is because so much of it is absolutely worthless.—The Macon Telegraph.

#### HONORS FOR DOCTOR MOODY

Every one of the older readers of *CLINICAL MEDICINE* will be pleased to learn that Dr. Charles Stuart Moody, of Hope, Idaho, for many years a contributor to this journal, is now serving as adjutant-general of the state of Idaho, and in this capacity has had charge of the moving of the state troops to the Mexican border, thus virtually being commander of the National Guard. Doctor Moody was also elected to the legislature at

the November election and is a candidate for the speakership. Likewise, he was chosen president of the Idaho State Medical Society at its last annual meeting, held at Twin Falls, in August.

Doctor Moody certainly is a strenuous and what an old friend of mine used to call a "concentrated" citizen. The wonder of it is that he is able to hold down all these important positions with dignity and honor. Moody is a big man, and as fine and as lovable as he is big. I have been fishing with him and know whereof I speak.

A serious obstacle at the present time in the presentation of new knowledge, is the arraignment of individual independence heretofore enjoyed by the pioneer investigator despite the main postulate of Herbert Spencer, in "First Principles," that the greatest factor in the promotion of what we call progress, is individual initiative. In this hegemony, the plenipotentiary right is assumed of discrediting new knowledge without investigation for no other reason than that it is in discordance with pre-existing knowledge and has therefore no official right of existence. When thought is thus monopolized, possession will be regarded as greater than achievement and the fascinating triumph of creation will be suppressed.

—Albert Abrams.

#### BREAKING THE PRESCRIBED REGIMEN, ALSO AS TO THE AGED

Whenever one of my patients breaks my rules and partakes of forbidden food, I always overhaul my directions, to learn why it was that this patient so greatly desires that particular article. In general, I find that, the same as for most other phenomena in nature, there is a reason underlying the dereliction, the food craved being a real need for him. However, this law by no means holds universally good; and, for one thing, we must take into consideration the influence of habit. Thus, for instance, a person who for many years has been in the habit of eating an excess of nitrogenous food, even though now suffering acutely from meat-poisoning, still will crave that sort of food. This fact, however, should be carefully explained to the patient; and I have yet to see the individual who, after thoroughly comprehending the reasons for my restriction, was unwilling to submit to them. Besides that, we often can meet the desires of our patients by suggesting foods that are not injurious. Men who are especially fond of animal food generally will be satisfied with certain vegetables that are most palatable when fried. Many times I have replaced meat by fried tomatoes, fried apples, fried cucumbers, fried eggplant, and similar foods, these completely satisfying my patients'

palates and, yet, avoiding the dangers resulting from a too great consumption of albuminoids.

There is no more satisfactory field of practice for the physician today than that of caring for elderly patients. This is not a question of treating them in disease, but, rather, one of prophylaxis, of so regulating their personal habits as to secure the very best possible results, the very greatest possible returns for their capital of vitality.

It has long been my practice to establish definite financial relations with such patients, so that they will not feel every time I call to see them, that it is so many dollars out of their pocket and into mine. I feel that it is to my interest to keep them well, instead of waiting until they are sick to run up a bill. I am confident that any patient above the age of ten years appreciates this matter. I live in some hopes, although they are not very great, that the medical profession in general may, some time, attain to the financial good sense of the plan just mentioned. I wish everybody could see this matter in its true light.

It is important that the regimen prescribed by us for these patients should not be needlessly strict. In fact, we should have a reason for every rule which we lay down, and this reason should be clearly explained to the patient. If we are wise in our selection of the regimen of that particular patient, it will not be long before the increased vitality, the clearness of perception, the increased pleasure of living will commend to him our course in such a way that never thereafter we shall see the slightest indication of rebellion. In truth, it has been touching to me to discover how these elderly patients hang upon my words and seek to draw the uttermost meaning from what I say; reading between the lines, as it were, seeking to follow out the workings of my mind in order the more thoroughly to comprehend my instructions.

It is not this class of patients who give us trouble by their disobedience. It is rather the men who need rest and will not take it, who are so possessed by their duties or their pleasures that they put aside the questions of health and of prolongation of life to that future period which never comes, until the final breakup has rendered it impossible for us to accomplish our object. It may be that hell is paved with good intentions; it is no less certain that the cemeteries are crowded by the bodies of men and women who have died prematurely because they "had to finish a



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DR. ALEXIS CARREL

This is a recent photograph of the brilliant Franco-American surgeon, winner of the Nobel prize, who is representing the Rockefeller Institute in France. It is said that thousands of limbs and lives have been saved by his method of sterilizing infected wounds.

certain piece of work" before they would begin to take care of their health.

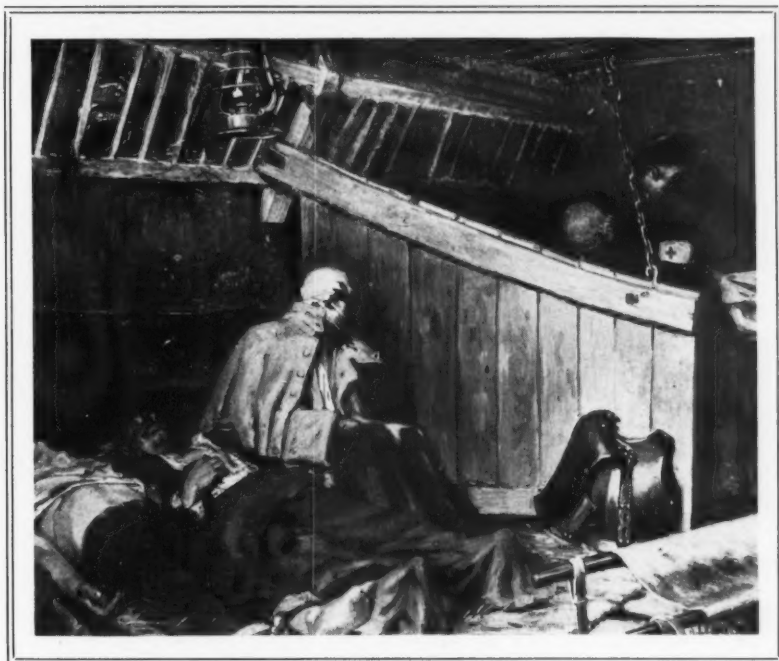
#### CREDIT THE DOCTORS

We are quite accustomed to hear a lot about the altruistic and unselfish work that we doctors are doing—hear it in meetings of medical societies and elsewhere where physicians spend a day off and indulge in a little mutual admiration, the latter very often in a strictly Pickwickian sense. Usually we are quite willing to admit that ours is the best profession for doing good and the worst for making money; very occasionally the same fact obtrudes itself upon the consciousness of the other fellow. Hence, the clipping, which was sent us by one of our subscribers, from we don't know what daily paper. The article evidently is an editorial. We copy:

"As a rebuke to those persons who refuse to admit the magnificent work being done by the medical profession in the cause of science, charity, and humanity, we consider a recent article by that brilliant writer, 'Gerard,' in *The Philadelphia Public Ledger*, well worth publication and unqualified endorsement. Says 'Gerard':

"The doctor is the only man I know who is forever trying to do things that will reduce his own income.

"You never find a lawyer who gives his life to lessening the number of lawsuits. Where is the storekeeper who advertises against the habit and pastime of shopping? Do you read anywhere about publishers urging people to read less? Do railroads tell us to send our freight by canal and travel, ourselves, on foot or by automobile? How many bankers do you know who recommend



"THE DAWN" — WOUNDED IN A STABLE

This reproduction of a painting by Adrien Leroy, recently hung in the French salon, at Paris, tells the story of the suffering of the wounded in the Great War. It is not a pleasant picture to look at, but it has a most powerful and impressive message.

an old coffee-pot as a safe deposit-box. A prize awaits anyone who will discover a broker who seriously deprecates the gentle vocation of stock speculation. Does your coal-dealer plead with you to burn gas, or your gas-man to use electricity?

But, the doctor is forever and always figuring out how to trap this germ or annihilate that bacillus or banish another malady, all of which tends to reduce the amount of sickness and lessen his own earning-capacity.

Estimate, if you can, how many million doctor's fees were saved when Edward Jenner—an Englishman, at about the time of the American revolution—discovered the secret of vaccination for preventing smallpox. What a heavy subtraction from human misery and doctor's purses was effected by Louis Pasteur, the Frenchman, who told the world how to combat hydrophobia!

"Major Reed, our immortal American doctor-man, knocked out the steadiest income which Cuban physicians enjoyed when he proved by heroic experiments that the mosquito carries yellow-fever."

"Not only did General Gorgas enable General Goethals to build the Panama canal, by removing disease, but he paralyzed the doctoring business in the whole Panama-Canal Zone."

"Professor Behring sat up nights trying to fathom the dark secret of diphtheria, and zip! when he found his antitoxin, he robbed tens of thousands of doctors, all over the world, of their fees for treating sick children."

"So it goes, and has been going for generations—medical science burning the midnight oil inventing ways to prevent disease and reduce medicinal earnings."

"To be sure, everybody falls ill some time and needs a doctor, but the doctors say that people, on the average, are sick fewer days in every year than they once were—direct results of the battle of medicine, against its own pocketbook."

Thanks, Mr. 'Gerard,' that is very nice, and we feel a lot better. We prefer having you say these things about us, to having to imitate little Jack Horner all the time. It gets monotonous.



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### FITTING ARTIFICIAL LIMBS

Thousands of soldiers have been crippled for life during the present war, and one of the problems with which the nations of Europe are now struggling is to reeducate these men—give them new occupations—so that they can support themselves when peace comes. Many wonderful ingenious devices have been prepared to take the place of the lost limbs.



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#### FIRST AID IN THE TRENCHES

The Red Cross man has no immunity from danger in this war. He is constantly exposed to the fire of the enemy, as he aids the wounded on the open field and in the trenches.



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#### AN AMERICAN AMBULANCE GROUP

This group consists of young men from American colleges who have served with credit at the front in France. Since then they have volunteered for service at Salonica.



DR. JOHN DILL ROBERTSON

This is a recent photograph of Chicago's energetic Commissioner of Health, who is making an enviable record in his office. Much publicity has been given to the experiments he is making as to economies in living. A volunteer squad of men and women are following a carefully devised dietary, laid out by the Commissioner, and which provides for the full nutritive needs of the individual at a minimum of expense. Under this "restricted" diet the squad is gaining in weight. The menus, and their cost, will be given in the next issue of this journal.

# Leading Articles

## The Relation of Sore Throat to Intestinal Infection

By DOUGLAS H. STEWART, M. D., New York City

*EDITORIAL NOTE.—The importance of so-called focal infections for the development of lesions in quite different localizations in the body is coming more fully to our professional consciousness. Even yet, however, the danger is slight that this possible source of obscure disease is overestimated or stressed unduly. At any rate, a careful study of Doctor Stewart's article on the relation of sore throat to intestinal infection will open up an important vista, and will, no doubt, help us in many difficult and puzzling cases.*

THE only throats that come to my attention are those of women who are to be confined or else to undergo some operation. But, before proceeding, let me say that, before entering upon practice, I first acquired a knowledge of shorthand writing. Then I began to put down in writing everything of interest coming to my attention in my medical life. Thus it is that, when any person has made a particularly striking remark, that remark has been booked for future reference.

Elsberg was one of the first in rank among the throat-men of his day. He said, in 1883: "It is not possible that septic throats are without influence upon the tract below them, especially as much of their secretion passes through the alimentary canal. Nobody knows just exactly what the results of such passage are, therefore, there is a good field for original work."

Jacobi said (Rome, 1894): "The man who thinks that he can take a single part of the human body and treat that, as a jeweler would take out and treat a single wheel of a watch, ought never to have been given a diploma."

Ample clinical material came my way at one time, the throat-cases were studied in that clinic; and some of the findings are here incorporated, with the idea of helpfulness and suggestion rather than that of completeness.

### The Rectum Must be Examined

In many cases of sore throat of the recurrent type, of the annual or semiannual variety, an examination of the anus and rectum will reveal there one or more red

and sometimes tender spots, streaks and the like, which may appear like dark-red localized edemas or even more than that; and these may last for some time after the throat apparently has been cured. Often they may be seen without employing the speculum, for they sometimes make their appearance as far down as almost to the mucocutaneous junction. In such a case, the patient may be aware of them, but, if they are located above the sphincter, he may experience no local discomfort. Usually no information regarding their existence is obtained except in answer to a direct question or by careful search.

These anorectal spots may be accompanied by proctitis; but they are analogous to the dermatitis, extending around a suppurating wound and resulting from immediate contact with the pus, or to the blush that will appear on any part of the body, whether wounded or not, if pus is rubbed in with sufficient persistence. They are not ulcers nor are they erosions, although it is possible that they might become either. They are the manifestation of irritation that comes from infection.

### Association of Tonsillitis and Colitis

Whether these spots occur in the colon or not, is not known, but colitis does arise when the only discernible possibility in the way of a cause is the sepsis that might result from an infected throat. It is an obstinate form, because the very conditions of the body that aggravate a sore throat, if they do not actually occasion it, will also give rise to colitis. When children swallow pus or mucopus instead of expectorating it, the pus will pass into the stools and the mucopus will

bear the germs with which it started on its course, plus other strains picked up somewhere in its career. The alimentary canal has many minute traumatisms that would answer perfectly for inoculation-purposes; in fact, if we are to judge it by its beginning and by its end, by the mouth and by the rectum, it would seem as though a very ordinary magnifying lens would demonstrate that the presence of some traumatism is the rule.

It has been urged that proctitis cannot come from a sore throat, because of some such rule as that "the infection of an orifice comes from its mouth." It suffices to point out for study any fistula which has broken through the skin or the carbuncle and crater of diabetes. It is even now maintained that Samuel Cooper was quite right in the observations which he published in 1807 and which state (page 33) that "to the surface secreting it, pus is quite unirritating, though it may greatly irritate any other." We have not, in our time, weakened his observation by stating that a wall of antibodies and leukocytes protects the secreting tissue. The essential value to the clinician lies in the statement as it was originally written. Whatever the human economy was planned for, it was not intended to digest pus. Even germs themselves break down and melt tissue by a process closely akin to peptonization, so that that is no bar to their action. In fact, the wonder is not that the effects of passing mucus-protected pus-germs through the alimentary canal are bad and are generally ignored; yet, they are not so bad as one would imagine they would be. If they were worse and more evident, it is quite possible that this would be all the better for the patient.

At any rate, it is the present writer's opinion that a specialist in gastrointestinal troubles will do two things; first, he will assert that mucus in the feces is not necessarily an evidence of lesion of the alimentary tract; second, he never will look into the nasopharynx for the source of the mucus.

At the present time, rheumatism is regarded in certain quarters as a manifestation of the streptococcus, which, very often indeed, is coupled with the staphylococcus. When this mixture attacks the mucous or synovial membranes, sweating of the skin is common. It is also quite usual to find sufferers from recurrent sore throat troubled with sweaty hands and feet. Possibly one reason for the location of this hyperidrosis is the close and

almost airtight covering furnished by glove or shoe.

#### Significance of Cold Feet

The feet may smell bad or may not. That depends on whether there is accompanying chlorosis, anemia or nervous or other condition. The condition here referred to is a cold clamminess. If such feet are taken into the hands, especially before one retires at night, they will feel cold and clammy; if they are well covered with the bed-clothing, even if wrapped snug as ice in a blanket, they still stay cold all night. Continued repetition of this procedure may confidently be expected to lower vitality and to make the nose and throat fair game for almost any infection to which these organs are exposed.

Let the local and general therapeusis be what it may, its effect will be enhanced by certain simple adjuvant measures. Patients often are told that a recurrent sore throat is an evidence of a rundown condition. This may not be true, for, some of the strongest and most robust men of today had quinsy in their childhood or youth. It has been thought that the tonsils broke down in defending the body from so-called rheumatic attacks, and, so, when those tonsils became sclerosed fibrous masses and had outlived their usefulness and no longer were capable of defending the body they constituted a menace and were but little more than foreign bodies that should be removed. Before their removal, however, a knee or shoulder became the seat of manifestations, thus indicating that infective pabulum had passed unscathed through the portal at which aforetime such invasions had been arrested and brought to naught. A sore throat may be present in a healthy as well as in an unhealthy body; it all depends upon various states and conditions.

A sore throat is very generally the result of infection, either general or local, yet, one hardly would say that sepsis or typhoid fever or pneumonia are the direct result of bad health. Rather, on the contrary, if a robust man contracts any of these three diseases, it may be in a very severe form, indeed; just as broken down alcoholics may contract a fatal form of any of the three and, yet, not appear, at a casual glance, to be so very sick.

That sore throat may be the result of Riggs' disease is possible, though rarely so; what is common is, to find it the result of dental plates. When those plates are immersed, over night, in a 1 : 1000 permanganate-solution, cleaned thoroughly with a solution of oxalic

acid in the morning, then for five minutes held under the water-tap, presto, sore throat and stinking breath disappear at the same time. (Proper fitting is taken for granted.)

Pyorrhea, alveolar abscess, and the like, seem to show their effects more as a toxemia than locally, that is, somewhere in the digestive canal; still, that swallowed germs are inert is hardly credible. They do not seem to be inert when taken out of the feces and cultivated. Of course, in this matter, overgrowth, unfavorable environment, and other factors are to be considered; also that the streptococcus or the staphylococcus are like pet dogs enjoying themselves in rummaging a garbage-can—these germs can become scavengers if they choose. In other words, these cocci are facultative and saprophytic and can live on a dead fish quite as well as on the mucous membranes of a human throat. On the nonresistant putrid fish, they produce both an enzyme and a toxin. One can hardly believe that swallowing the toxin that is produced on the fish will cause the rapid death that it brings on, and then, subsequent to declaring such belief, expect any confidence in the idea that the same germs, working upon the contents of the alimentary canal and aided in attacks on its walls by an enzyme, should prove inert.

The late Doctor Dawbarn and myself, many years ago, performed an appendicostomy in a woman, and she has been under my care ever since. To amuse the Doctor, I used to make cultures of germs that came out of the appendix-opening. I used to pass a catheter every day or two (to make sure that the tube would stay open), then I drew the end of the catheter across an agar nutrient.

Some eminent microscopist was in the country at the time and he and Dawbarn came to the conclusion that the mixup was so strange and peculiar that the only way they could explain it was, that some of the germs were "trying to get married." On another occasion, when some marvelous rainbow-yeasts appeared, the comment was: "You sent us fuchsias; tomorrow is Easter—send lilies." The whole thing would not interest a bacteriologist at all. He can duplicate it by keeping his slop-pail at 100°F. and testing that. The point to be emphasized is, that the germs found in the throat, and possibly most of the others, can live in the caput coli.

#### One Way of Curing Recurrent Sore Throat

For reasons learned from the aforesaid woman, but which it would take too long to

tell, the statement is here made that, providing the patient can swallow, tension, congestion, and all will disappear like magic from a throat if, in addition to local measures of a proper sort, the patient is given 30 grains of compound jalap powder with 1-3 grain of saccharin and 2-3 of a drop of oil of cinnamon; three such powders being given, spaced one hour apart. That the jalap must be up to standard would seem self-evident, were it not for many disappointments which arose from a contrary condition.

If the pain in the throat precludes swallowing, and particularly if there is reason to suppose that rheumatism is an element in the case, then a warm enema containing a teaspoonful each of table-salt and sodium salicylate should be given and this followed after an hour's interval, by one containing a teaspoonful of table-salt and a tablespoonful of epsom salt; the amount of water to be a quart or a little more in every instance.

If the patient has colitis, recurrence of the throat trouble is almost a certainty. Such a patient should be kept under treatment until the colitis is cured. If the red spots in the rectum or anus are at all painful, application of a 2-percent sodium-bicarbonate solution will act well. However, the enema of salt and epsom salt will do excellently.

When the feet are cold and clammy (which condition the patient often discovers only when directed by the physician to feel the feet, and not to depend upon any sensation of coldness in general), they must, just before the hour of retiring, be put into hot water containing a heaping teaspoonful of alum. (These foot-baths should contain washing-soda, at first, until any corns present are softened). The feet must be heated through and through, must be dried, with much friction, and must be covered with a pair of old thick stockings, *full two sizes too large*. These stockings must be kept on during the night, so that the bed-clothing does not come in contact with the feet; and a few small holes in them are no objection, inasmuch as they ventilate and lessen the nonconduction, thus tending to stimulation rather than stagnation. The shoes that are to be worn outdoors must have a layer of oilsilk or other impervious material in between the sole-layers. Any shoemaker will fix this for a few cents (cut the threads, introduce the oilsilk and sew up again). This will afford a very great protection without impairing ventilation.

There always is the heroic, and usually impossible, side of the picture. The patient

can harden the feet by walking in cold water every day and in winter upon the snow. The hands can be toughened by handling ice. and shoes and gloves may be omitted. All of these expedients can be added. A barber

can sterilize his brush after each customer and the manicurist can boil her instruments, but, as the lawyers have it, "there is a reasonable certainty that their doing so is an improbability."

## The Active Treatment of Pneumonia

By W. C. WOLVERTON, M. D., Linton, North Dakota

*EDITORIAL NOTE.—At this time of the year, it is always well to take stock of what we have learned about pneumonia. It is proper to emphasize it over and over again that active medication is not useless in this disease but that it will moderate its severity and shorten its course, if of the right kind. Doctor Wolvertson's experience in the treatment of pneumonia has been so favorable, that we have asked him to prepare a special paper on this subject, and we are, therefore, postponing the continuation of his serial on Vaccine- and Serum-Therapy.*

NOTWITHSTANDING the multitude of "treatments" elaborated for its undoing, pneumonia, in its season, remains the "captain of the men of death." However, during the past few years, I have evolved a plan of defense against this dread destroyer the results of which have been so excellent that I feel constrained to describe it in detail and to illustrate it by a number of case-reports. During the past six years, out of all the cases of pneumonia treated by me—cases of every degree of severity and occurring in practically all ages—only one death has occurred; and in this one case the environmental conditions were such as practically to preclude recovery under any form of treatment.

We have been told, so many times, that "pneumonia is a self-limited process, one that runs a definite course, and is uninfluenced by any form of treatment" that far too many physicians have come to accept this statement as a fact, ceased even to try any kind of active therapeutic interference. The so-called "expectant treatment" of pneumonia consists, essentially, in doing nothing further, after making the diagnosis, than to stand by "expecting" the patient to die—an expectation, alas, that only too often is realized.

It is very well in theory to talk about "hygienic and dietetic treatment," but, in practice, the average pneumonia-patient is far too ill to care for any sort of nourishment; and, while in a charity-hospital one may be able to put these poor unfortunates outdoors in zero weather, "it can't be done" in private practice, at least not in the part of the country where I reside. Moreover, the galenic preparations of drugs are so uncertain in their actions that they, too, are about

as disappointing as is the "expectant" treatment of pneumonia.

### The Satisfactory Treatment Outlined

What, then, shall we do for our patients suffering from pneumonia? In the first place, the patient should be placed in a light, airy, cheerful room, if that is possible. An abundance of *fresh*, but not necessarily *frigid*, air must be provided by the best ventilation obtainable. All "company" should be barred from the sick-room; for, the patient is having a hard-enough fight for breath without being compelled to consume any of it in unnecessary conversation. If the patient feels inclined to take some nourishment, milk probably meets all the requirements. However, under the plan of treatment about to be described, the course of the attack is usually so short that, if the patient be fairly well nourished at the onset, the question of feeding may be disregarded until the crisis has passed.

One measure that affords considerable comfort to the sufferer is the application of the cotton-lined jacket. This is most easily made by laying an ordinary undershirt upon a flat surface (a table), and fitting to its inner surface a layer of fine absorbent cotton and then tacking it in place with a few long stitches.

If "pain in the side" is a troublesome symptom, as it usually is, an ice-bag will give prompt relief as a rule. However, there is one objection to this measure, at least theoretically, namely, that cold interferes with phagocytosis. Upon the whole, though, I believe the positive benefits outweigh the possible disadvantages. In some cases, a hot-water-bag will serve the same purpose as does the ice-bag.

As a local, surface application, I like a combination of oil of eucalyptus, 1 ounce;

camphorated oil, 5 ounces; and guaiacol, to the amount of from 1 to 5 percent—the latter being varied according to the relative robustness of the patient. Occasionally, when a large proportion of guaiacol had been added, a rather severe chill has followed; still, to my knowledge, no really injurious results have developed. From a rather extended observation, I am led to conclude that guaiacol exerts a specific detrimental influence upon the pneumococcus.

I cannot understand how any of the various "mud" poultices so extensively advertised nowadays can exert a beneficial influence upon the course of pneumonia. If one who has watched the pitiful struggle of a pneumonia-patient for breath—especially in the case of an infant or young child—will figure out the number of foot-pounds of energy required to raise even an ounce of sticky "mud" with each shallow, hurried, and painful respiration, over a period of a few hours, he will find food for reflection. On the other hand, a cotton jacket is light and comfortable and does not interfere with respiration.

#### The Active Medicinal Course

The first indication, in the *active* medicinal treatment of any febrile disease, and notably in pneumonia, is, thoroughly to empty the gastrointestinal tract, so as to have a clean mucosa, from which medicinal agents may, with a reasonable degree of certainty, be absorbed. It may be stated as an axiom that absorption from an intestinal canal loaded with fermenting and often putrefying food residue is, at best, a decidedly uncertain quantity.

To accomplish this greatly to be desired cleaning-out process, nothing, in my opinion, meets the indication so satisfactorily as the well-known combination of calomel and sodium bicarbonate; from 3 to 5 grains of each constituting the right dose for an adult, while for children from 1 to 3 grains of each is sufficient. I want to add that I believe it is good practice to give the calomel all in a single dose, rather than fractionally, as the "broken" doses keep the gastrointestinal canal stirred up for too long a time. Following the calomel and soda, an effervescent saline laxative often will prove advantageous.

Once a clean digestive tract has been insured, the next indication is, to relieve circulatory engorgement in the inflamed pulmonary tissues and restore circulatory equilibrium. This is best accomplished by means

of small doses of aconitine and veratrine. To these two remedies, may advantageously be added digitalin, for the purpose of prolonging cardiac diastole, and increasing the force of systole, so as thoroughly to deplete the lung at each cycle. These remedies are admirably combined in the now well-known "defervescent compound," consisting of aconitine hydrobromide (crystalline), 1-800 grain; digitalin, 1-64 grain; veratrine hydrochloride, 1-128 grain. For adults, one such granule may be administered every fifteen to thirty minutes until the pulse is appreciably softened and slowed, the temperature begins to fall, and the skin becomes slightly moist; then less often, giving one such dose every hour or at longer intervals, as required. For children, Shaller's rule should be followed: In 24 teaspoonfuls of hot water, dissolve 1 granule for each year of the child's age, *plus 1 extra granule*; one teaspoonful being a dose. This constitutes safe dosage for children, which, as for adults, is first to be pushed to effect and then given less frequently.

By persistently following the treatment here detailed, you will see very few "typical" cases of pneumonia, the attacks ending on the fifth, seventh or ninth day by crisis; while most of them will end by lysis, which is not nearly so hard on the patient; moreover, many will be "aborted" or "jugulated" within twenty-four to forty-eight hours, if seen early and treatment is begun promptly.

#### Addition of Vaccine-Therapy a Vast Improvement

The foregoing, modified to fit individual cases, was employed by me for a number of years, with very good results, indeed. Then, six years ago, a, to me, new line of therapeutic agents, namely, that of the bacterins, or bacterial vaccines, was brought to my attention. Since associating bacterin-therapy with the drug-therapy described in the foregoing, my results have been vastly better, so that, as was stated earlier in this paper, I have lost but one pneumonia-patient within the last six years.

While there can be no reasonable doubt that the pneumococcus is the true specific etiologic agent, at least in *lobar* pneumonia, it is a belief quite generally accepted nowadays that infections are usually due, not to a single variety ("pure culture") of micro-organism, but to several varieties, although one certain variety usually predominates. In other words, ordinarily we have *mixed infections* to deal with. This is particularly true in infections of the respiratory

tract, and most of all so in broncho-pneumonia.

Hence, it is that, unless the physician also is an unusually skillful bacteriologist, it is not unreasonable to make use of "mixed," or "combined," bacterins containing the usual pathogenic bacteria met with in this particular class of acute pulmonary infections. Such a "vaccine," then, would contain the pneumococcus, streptococcus, and staphylococcus aureus and albus. If there be a place for polyvalent, mixed stock bacterins, it certainly is in pneumonia, a disease which runs so rapid a course that the patient might die while the doctor is waiting for the preparation of an autogenous vaccine. Besides, actual practice shows such a stock bacterin to be entirely satisfactory in its action in the class of cases we are considering.

The dose of killed pneumococci and streptococci is from 20 to 60 millions each; for the staphylococci, 50 to 100 millions of each variety represented in the bacterin.

The earlier the bacterin is administered in a case of pneumonia, the better is the chance of cutting short the attack. If in twenty-four hours after the initial dose of bacterin no improvement is manifested in the clinical symptoms (temperature and pulse), the dose should be repeated, increased by about 50 percent. If, however, there be a noticeable improvement, the *same-sized* dose as was administered in the beginning may be repeated; or, it may be well to wait another twenty-four hours, then administer a slightly larger dose. Only clinical experience will make this indication clear. For children, from one-fourth to one-half the adult dose may be given; or, Young's rule for dosage of drugs may be followed. Another good way to gauge the size of a dose of bacterin, and of drug remedies as well, is, to fit the size of the dose to the body-weight of the patient. This, perhaps, is the best rule of all.

#### Consideration of Some Special Symptoms

Before taking up individual case-reports, it will be well to speak of some special symptoms met with in the treatment of pneumonia, and their treatment.

Cough, as a rule, is a painfully distressing symptom. For its relief, I have found nothing so effective as dionin, in doses of 1-4 grain for adults, repeated every two to four hours. Dover's powder, 5 grains every three hours, more or less, also is an excellent remedy. Calcidin (iodized calcium) should be given, I believe, in every case of pneumonia. It is

a loose, unstable chemical compound, which easily breaks up in the body, setting free (nascent) iodine. Iodine is one of our very best antiseptics, alteratives, and stimulators of absorption of exudates. It is therefore, easy to see why this combination is applicable to the treatment of pneumonia; besides, many eminent clinicians recommend the use of *calcium* compounds in pneumonia. Hence, calcidin is doubly indicated in the disease under discussion. The dose is from 3 to 5 grains every three or four hours.

In cases characterized by hyperpyrexia, delirium or other indications of an unusual degree of toxemia, continuous proctoclysis, by means of the "Murphy-drip" apparatus, is urgently indicated. The rationale of this continuous proctoclysis has been fully dealt with in a previous paper in this journal, and so, will not be gone into at any length at this time. Suffice to say that it is an exceedingly efficient means of eliminating from the body toxic products of bacterial activity.

Ordinarily, physiological saline solution is employed with the Murphy apparatus; but in pneumonia—on theoretical grounds, at least—plain warm water is preferable to the salt-solution (because of chloride retention in the tissues during an attack of pneumonia). A complete Murphy apparatus (with the exception of an irrigator), designed to be attached to an ordinary fountain syringe, is procurable at a cost of less than two dollars. Every physician should own at least one of these exceedingly valuable pieces of equipment.

In the same class of cases as that in which the Murphy drip is indicated, application of an ice-bag to the head also is decidedly useful.

At the first appearance of any sign of weakening of the right heart, digitalin and strychnine are urgently indicated. And here I should say a few words about the blood pressure as a guide to prognosis in pneumonia. Gibson, of Edinburg, first called the attention of the profession to the fact that as long as the systolic blood pressure, as expressed in millimeters of mercury, exceeds the number of pulse beats per minute, the prognosis in pneumonia is favorable. When, however, the blood pressure begins to fall and at the same time the pulse becomes more rapid, so that the blood pressure (in millimeters) is exceeded by the number of pulse-waves per minute, then the prognosis becomes grave; for the latter condition denotes a failing heart. This being so, the patient's blood pressure should be determined at frequent intervals and due heed be given it with relation to the

administering or withholding of cardiac stimulants.

#### A Few Case-Reports

Following are a few case-reports illustrating the results obtained by the combined use of active-principle- and bacterin-therapy.

Case 1. The patient was a Norwegian girl of twelve years. A little over two months prior to this attack of pneumonia, she had undergone, at my hands, an operation for the removal of a gangrenous appendix. She was anemic and in very poor physical condition at the time of the operation; but, with the "Murphy drip," Fowler position, free drainage and the administration of the "Van Cott" combined bacterin she recovered nicely, leaving the hospital after three weeks.

A little over two months after the operation I was called to see this girl and found her with a well-developed pneumonia of the right lower lobe. Her temperature then at 3 p. m., was 105.2° F.; pulse 132; respiration (not counted) very rapid, shallow, and accompanied by severe pain in the right side of the chest. The initial chill had occurred that same morning, some seven or eight hours earlier. She was coughing frequently, and was expectorating blood-streaked sputum. Her stomach was very irritable and she vomited up all medicine given.

Immediately I injected a dose of a stock bacterin containing 24 million killed pneumococci and 18 million killed streptococci; however, no medicinal treatment was instituted, owing to the great irritability of the patient's stomach. Within an hour or two, the temperature fell 1.6 degrees, but, by 8 p. m. had risen again to 105.6 degrees. After this hour, however, the temperature began to fall steadily, being only 99.6° F. at 5 a. m., at which time the pulse rate was 100. Next day, May 1, the morning temperature had reached 104.8° F. and the pulse was 115. A second dose of bacterin, identical with the first, now was injected, whereupon the temperature began to fall within five hours, and went down uninterruptedly, reaching 96.2 degrees at noon of May 2, only seventy hours after the administration of the first dose of bacterin. The temperature was normal on the third day of the attack and remained so, the patient being discharged, and returned to her home, on May 4.

Several things are well illustrated by this case: (1) the high temperature at the time

of each inoculation with the bacterin; (2) the sudden drop of 1 to 1.5 degrees quickly following the injection, with as rapid return to about the original level, this marking the brief negative phase; (3) the steady and continued drop of temperature, immediately following the short negative phase, which characterized the positive phase; this drop amounting, in the first instance, to 6 degrees and in the second to 8 degrees; (4) the gradual return of the temperature to near its former level, as the response of the immunizing mechanism to the bacterin wore off and the protective substances elaborated, consequent upon the inoculation, were used up in the war upon the invading bacteria; this being the indication for another dose of bacterin; (5) the typical crisis following the second injection, the temperature going considerably subnormal, and not rising above the normal thereafter. In many cases, following the use of bacterin in pneumonia, the typical crisis is absent, the disease ending by lysis.

Case 2. A German-Russian boy of eleven years was brought to the hospital about twenty-four hours after the onset of a typical attack of pneumonia involving the left lower lobe. His case appeared to be one of more than average severity and I hardly expected to "abort" this attack. However, contrary to expectations, under combined bacterin- and active-principle-therapy, the temperature receded to normal within three days, and the patient returned to his home on the fifth day after the onset of the infection.

Case 3. When the patient, a woman of twenty-eight years, was first seen, her temperature was 103° F.; respirations was rapid and painful; percussion-dullness extended over the lower and middle lobes of the right lung; breathing sounds were diminished over the same area; considerable pain was felt in the right side of the chest. Here, was a case of beginning lobar pneumonia. A combined bacterin was administered. Aconitine and veratrine were given. Eleven hours later, that same evening, the temperature was 100° F. Next day at noon, twenty-four hours after the beginning of the treatment, her temperature stood at 99° F. Her recovery was uneventful, she sitting up a day or two later.

Many more such cases could be detailed, but these three show very well what can be accomplished if *active* treatment, as opposed to "expectant" treatment, is adopted *early*.



# A Symposium on Long Life

By J. M. FRENCH, M. D., Milford, Massachusetts

*EDITORIAL NOTE.—Long life—we all have moments in which we wonder whether life is worth living at all; and, yet, we all want to live long. A symposium on the subject of longevity, in which several octogenarians give "expert testimony," as it were, should prove attractive. Note that the prescription for living long is mainly—just good sense and moderation.*

AT a meeting of the Thurber Medical Association, held in Milford (Mass.) on December 7 last, the general subject considered was, how to live one hundred years, particularly as to the causes of centenarianism. Some of my readers may remember that I have written before this about this Association—a small independent local medical society, made up of a few ordinary country doctors, busy, everyday-men, who manage the business of the society in their own way for their own needs. For sixty-three years now it has held regular meetings and done good work; and no other independent local medical society in America has as yet put in a claim for a better record.

It is written in the "creed" of the Thurber Medical Association that "medical men owe it as a debt to their profession to be leaders in every movement tending to aid in the promotion of health and longevity and increase of intelligence and morality in the communities in which they reside."

It was in accordance with this principle that this symposium lately was planned; and, inasmuch as the subject was somewhat out of the beaten track and points the way to the medicine of the future, a brief synopsis may be of general interest.

Although technically limited to the consideration of centenarianism, the real aim was, to bring out the different factors that influence the duration of life, and more particularly those that favor the prolonged life. It was an open meeting, a general invitation having been extended to the public to attend, and a goodly number of citizens responded to the call (one man having motored from Boston), this outside audience including dentists, nurses, editors, clergymen, and business men, besides nearly as many women of various stations.

The program called for four short papers, and these were to be followed by a general discussion.

## A Layman's Views

The first paper was presented by the widow of a former member of the society and considered the causes of long life as named by aged people, themselves, and their friends.

This represented the layman's view of the subject. As among these causes, the essayist enumerated a simple life, regular habits, outdoor life, temperance in eating and drinking, abstinence or at least moderation in the use of alcoholics and tobacco, hard work, early hours of rising and retiring, plenty of sleep, cheerfulness and never to worry, and endeavoring to look at the bright side of things. She pointed out that most centenarians are spare eaters; that the majority of them were born in the country and brought up on a farm; the importance of heredity and the necessity of beginning with one's grandfather, the importance of self-control, the value of the mind as a factor in long life, and, finally, that "everything in excess becomes a vice."

## Longevity a Natural Attribute

The second paper was read by the president of the Association, one of the leading physicians of the vicinity, active in many lines of work, and just chosen to represent his district in the state legislature. His topic was, the hereditary and constitutional causes of centenarianism. He believed that, if it were possible to obtain full and correct records of the family history of an individual and pertinent facts concerning his heredity, these factors alone would furnish a better ground for judgment as to his or her probable longevity than would all the other elements combined. In fact, it has become a maxim among those who have paid attention to this subject that the most important of all qualifications for reaching old age is an inherited tendency to long life.

This last-named "tendency" to longevity by no means is the same as good health, for, it is sometimes found in persons who have not known good health for years. Nor is it synonymous with physical vigor, since many persons grow old who are lacking in vigor and robustness. It is different from strength, being seldom found combined with unusual muscular power. Positively expressed, this individual tendency is simply an inborn quality of endurance, a tendency of the organism, a tenacity of life. The people who possess this quality never die a natural death

until their time has come. They may be sick more often and more severely than those who are less enduring and die more readily. Indeed, it is just because of this quality of endurance that long lived individuals are so often taken sick; for, they recover more readily from the acute diseases to which they are subject, and they outlive the chronically sick ones. Hence, it is no exaggeration to say that the weak and puny child of a long-lived family is more likely to reach threescore and ten than is the apparently strong and vigorous one who comes from shortlived stock.

#### What of the One-Child-Strong-Child Doctrine?

As a good example of inherited longevity, the Doctor cited the case of Tourtelotte Inman, who died in Milford, Massachusetts, on March 17, 1878, at the age of nearly 101 years. He was born June 17, 1778, and was the youngest of 16 children, all of whom lived to a great age. The one of this family to attain the greatest age was a daughter, who lived to be 102 years old. The one to have the shortest life was 75 years old at death. For a family of 16 children, this is a very remarkable record. It is made all the more so from the fact that the parents and grandparents were not especially longlived. Tourtelotte Inman first married at the age of 27, but his wife died a few years later. Then he married again, his second wife, some years his junior, surviving him. He was also survived by 3 of his 7 children, and by 5 grandchildren and 5 great-grandchildren.

The speaker also related the case of Dr. John George Metcalf, a charter-member of the Thurber Medical Association, who, in 1892, died at the age of more than 90 years. The paternal grandfather of this patriarch, who likewise was a physician, died at the age of 88; while his father, also a physician, attained to the same age of 88, and his mother that of 85. A sister of his died at 88, and of two brothers one died at 68 and the other at 81. Moreover, his wife died at 79. They had 4 children, one of whom died in infancy, but the other three lived well past the 70-milestone. This family, while not furnishing examples of extreme old age, yet, is notable for the average longevity of its members, only one of whom died under the age of 62; a goodly proportion, however, lived to be over 80. One thing seems noteworthy: the age of 88 years occurs so frequently in this family as to suggest that this was the hereditary life-cycle, the age at which it might be expected that the clock of life would run down.

Another instance related, one which furnishes a good illustration of the difference between good health and a strong constitution, is the following: A certain old lady of 83 had long been bedridden from paralysis. One day the doctor who formerly had attended this woman met her son upon the street, and, learning about the old lady's condition, expressed much surprise at her sturdy resistance to disease and tenacious hold on life, saying that, "if she weren't possessed of a remarkably strong constitution, she would have been dead years ago." This remark chancing to be repeated in the old lady's hearing, she exclaimed: "That shows how little he knows about my constitution; for, here, for twenty years, I haven't seen a well day nor one free from pain." And, yet, a better example of a strong constitution could not well have been adduced than that exhibited in her case. She had shown that capacity to endure suffering, resist disease, and withstand advancing years—which is the very essence of a good constitution and the surest proof of hereditary longevity.

#### What Long-Lived People Say

The third topic discussed was the influence of habits of living upon the duration of life. The speaker was Mr. W. H. Brock, of Athol, Massachusetts, editor of *The Healthy Home*, a popular health-journal published in Athol and vouched for by the chairman as the best of its kind of which he had any knowledge, one that was free from fads and hobbies, teaching instead of scolding, building up instead of pulling down, and whose 500 contributors are members of the medical profession. This speaker started in by saying that he had a "perfectly good paper tucked away in his coat pocket," but had concluded to let it stay there and to do a little talking, instead.

He criticized the doctors for giving too much medicine and too little practical instruction in right living. But, as this bit of criticism was much in the line of the meeting, in pointing the way to prevention instead of cure as the ultimate goal, and as he made it plain that his business was, to work with the doctors and not against them, his remarks were well received by the doctors present, who admitted that there might be some ground for his claims. He told of his own experience some twenty-five years ago, when, having married the best woman in Massachusetts, he went the next day to his physician and, reminding him that his medical fees had not averaged over two dollars a year, handed him a check for twenty-five dollars,

saying, that now there were two in his family and he wanted the doctor to look after them both and do what he could to keep them from being sick—and there was his first-year's pay. That doctor gazed with longing eyes upon the check—it looked good to him and he needed it. But, after a moment's consideration, he declined to take it, saying, that the job was too big for him, he didn't dare to undertake it; and, besides, the *plan did not seem to him quite ethical!* The result was, the speaker paid his physician for his services during the next three years, which included the ushering in of a baby, the sum of fifteen dollars. "And," he continued, "that doctor might just as well have had twenty-five dollars a year from that day to this; it would have been money in his pocket, and, I think, in mine, also!"

He further declared that habits of living are of equal importance with heredity in their influence upon health and longevity; and argued that men should be taught to live according to the laws of health, instead of living as they please and taking medicine to get them out of the scrape. Also, he believed the physician should do the very thing his own doctor had refused to do—contract with his families to take charge of them by the year, looking after them in health, so as to keep them from being sick, so far as possible.

He closed with a summary of some things he had learned in his work, especially from talks with numerous successful men past the age of threescore and ten regarding their personal habits of life, including diet, exercise, work, and other matters pertaining to health and long life. His list includes senators, representatives, clergymen, lawyers, physicians, authors, artists, educators, inventors, merchants and other business men, and, indeed, almost all classes of brain-workers. These men not merely have been successful, but have continued so until well past their seventieth year, many of them being between 80 and 90 years of age.

As to diet, nearly all mentioned caution in eating and drinking, choosing simple food, taken regularly, in very moderate amounts, eaten slowly and under pleasant surroundings, and thoroughly masticated. The kinds of food most commonly named are bread, milk, butter, cereals, abundance of fruit, and all kinds of vegetables, especially potatoes, and some meat. It is noticeable that most of them take meat only in small or moderate amounts, although few or none of them are strict vegetarians. Nearly all drink freely

of water, most use either tea or coffee or both, but usually weak and in great moderation. Very few indulge in alcoholics, others only at rare intervals and in strict moderation. Tobacco has its friends and its enemies. The importance of regular and normal movements of the bowels is universally recognized. No arbitrary rules of diet are laid down.

As to exercise, rest, and sleep, the general verdict favors hard work, both mental and physical, plenty of exercise in the open air, and either frequent rest-days or a long vacation every year. Seven or eight hours of sleep each day is commonly regarded as the needful amount. The importance of the mind as a factor in long life is universally recognized. A clear conscience and the consolations of religion are also recognized as aids to health and longevity.

#### Praise of the Medical and Nursing Professions

The closing paper was read by the chairman of the meeting, and, after briefly touching upon a few points not brought out by the others (such as sex, marriage, climate, occupation), dealt mainly with the part of the physician in promoting long life. He spoke first upon the physician as a practitioner of medicine and surgery, calling attention to the number of lives that have been saved by such measures as the use of quinine in malaria, antitoxin in diphtheria, vaccination as a preventive of smallpox, and surgery in appendicitis; of the wonderful decline in the infantile death rate due to increased cleanliness and asepsis, with greater care in feeding and better treatment in sickness; the wonderful results of modern surgery, whereby we are enabled to have access to all parts of the body, removing, repairing, remaking every portion, and restoring health to what seemed a hopeless wreck; and, finally, of the work of the physician in the degenerative diseases of later life, relieving where he cannot cure, controlling where he cannot eradicate, and preventing further progress when called at a sufficiently early stage. These things surely indicate that the practitioner of medicine is responsible for a large portion of the increased duration of life in modern times.

He next called attention to the work of the physician as a sanitarian and hygienist, claiming that the medicine of the future is preventive medicine, and that the physician of tomorrow will not be merely a healer of disease and a reliever of suffering, but far more largely than now a preventer of both. Following in the same lines as the previous speaker, he maintained that it is vastly easier

to keep well than to get well, and advocated the employment of physicians to look after their families in health as well as in sickness, and especially to look after the children, guarding them against the common causes of disease. He also expressed belief that all persons past middle age should be examined by their physician at least once a year, in order that the first symptoms of degenerative disease may be detected and all possible measures taken to prevent their further progress.

Next, he spoke of the physician as a scientist and discoverer—the man who breaks ground for the physician as a practitioner of medicine and furnishes the tools for him as a sanitarian and hygienist. This man studies the action of drugs; he discovers the miracle of vaccination; he develops and teaches the use of the antitoxins and serums and bacterins and internal secretions; he discovers the anesthetics that render surgery painless; he teaches antiseptics and asepsis, which render surgery safe; he proves that malaria is caused by one kind of mosquito and yellow-fever by another, and that rats are at least one cause of the plague. By the application of these and other similar discoveries, he changes the Canal Zone from a place of death to a place of health, and he makes the tropics inhabitable in safety for the white man—thereby adding many years to human life.

He closed with a tribute to the trained nurse as the doctor's helper in the work of relieving suffering and lengthening life—a tribute which seemed the more appropriate, since the meeting was held in the parlors of the Draper Memorial Home for Nurses, recently built and fitted up, for the benefit of the nurses of the Milford Hospital, by the children of the late Governor and Mrs. Draper, who themselves presented the Hospital some thirteen years ago. Beginning with a picture of Florence Nightingale in the Crimean War, who came to the front with her band of trained nurses at a time when nursing was almost unknown, he pictured her storming the

government storehouses and carrying away the sorely needed supplies, impatient of unnecessary delays and reckless of governmental red tape. Into the gloomy wards she brought light, fresh air, hope; and she instituted such improvements in sanitation and hygiene, that in a few months the death rate was reduced from 60 percent to finally 1 percent.

He closed with a story of the world-war of today, as gathered from the latest news from the European war-zone. The Allied forces had lost many soldiers from a fatal form of gangrene, brought on by poisoning by the deadly gas of the enemy gas-bombs. Doctor Taylor, a physician in the American Hospital in France, after long search, discovered an antidote, which, he believed, would save thousands of lives. He had tested it on rats and other small animals, but still needed a human subject on which to make a final test. Then came Mary Davies, an English Red Cross nurse, who had learned of Doctor Taylor's need, and who had studied the situation herself. Unknown to any human being but herself, she inoculated herself with the deadly poison of the gas-bombs, and when she felt its benumbing effects creeping over her system, she sent for Doctor Taylor. He came. He had not dared to ask any human being to run this risk for him. But here was Mary Davies. Her part of the work was done and quick death stared her in the face. His chance was there. He injected the antidote, then anxiously awaited the result. Twenty-four long hours passed by, and then Mary Davies rose from her stupor and reported for duty, rejoicing with him that she had proved the value of a remedy that was to save many lives before the war was over. All honor to Mary Davies for her brave deed. Let us hereafter, on the rolls of fame, couple the names of Florence Nightingale, the mother of trained nurses and of Mary Davies, the perfect flower and fruitage of the nursing craft.



# A New Theory of the Etiology of Epilepsy

By L. V. DAWSON, M. D., Plainview, Texas

SINCE May 20 of last year, at which time *The Journal of the American Medical Association* published a paper by Dr. C. A. L. Reed, of Cincinnati,<sup>1</sup> in which he reported the successful effort to isolate the bacillus epilepticus, medical literature has been well marked with comments upon that article, both for and against. Inasmuch as some have and some have not been able to obtain this bacillus from confirmed epileptics, inasmuch as some do and some do not believe in the existence of this particular bacillus, and inasmuch as some do and some do not get results in the treatment of epilepsy by the method outlined by Doctor Reed, this matter seems to have settled itself into the sphere of theory.

The theory advanced is plausible. Reading the aforementioned article by Doctor Reed, makes the theory seem more plausible. But, if we accept Reed's assertions as establishing the so-named bacillus epilepticus as the etiological factor of epilepsy, what are we to do with the reports of Dercum,<sup>2</sup> of Wherry and Oliver,<sup>3</sup> of Caro and Thom,<sup>4</sup> of Held,<sup>5</sup> and with the twenty-second annual report of the Craig Colony or with the abundant literature on the subject that has been presented to the profession within the past year and a half?

Having followed closely the literature for the past two years, having theorized with some writers, and having experimented with other investigators, I feel justified in contributing my little bit toward this most important subject. When one learns that in the United States alone there are more than 200,000 recorded epileptics and reflects that there are perhaps as many more not on record, and when, further, one reviews the life of just one single epileptic, the seriousness of the situation forces itself into a very prominent place.

One cannot read this mass of literature and blindly accept all statements, for the reading presents altogether too many contradictions.

I myself have studied a number of cases at first hand, and I have seen some good results and some not so good. Doctor Fitzsimmons, of Amarillo, Texas, isolated a bacillus identical with the one described by Doctor Reed by inoculating with the blood of an epileptic, a sterile culture of nutrient agar. I obtained the same bacillus by fol-

lowing the same technic and at present time I have some cultures of this bacillus in my incubator. Injecting with it a rabbit, produced, in thirty-one hours, epileptiform seizures, and the rabbit continued having convulsions until it died, one hundred and seven hours after the injection was made. I have failed to isolate the bacillus in at least 10 cases of epilepsy, while I have found a positive growth (pure) in only 2 cases, one of these being from a patient upon whom Doctor Reed had operated nearly a year before. I do not accept the theory of the bacillus epilepticus being the cause of the malady; still, I am not willing to assume any undue risk in self-inoculation, for fear of producing a possible serious condition—no one would willingly choose epilepsy as a companion.

Notwithstanding the difference in opinions, as expressed by the various writers, a careful study of the existing conditions and of the literature of the past few years will convince one that much progress is being made and much hope entertained that some definite conclusions may be arrived at in the near future concerning the etiology and the treatment of this dread condition.

## Doubts as to the Position of the Bacillus Epilepticus

The etiology of epilepsy has been studied extensively, and the blame has been laid upon heredity, syphilis, trauma, protracted labor, autointoxication, arteriosclerosis, intracranial complications, reflex conditions, and as many more causes; however, not one of them gained any more prominence over the others. There is much to support each one, depending upon the light in which it is presented.

We do seem to be getting further away from heredity, and personally I cannot accept heredity at all, for, the method applied for establishing epilepsy as a hereditary condition would cause typhoid fever, pneumonia, and many other diseases conditions to be based upon heredity in more than 80 percent of all cases. History-taking is, at best, a very unsatisfactory method of obtaining facts.

Undoubtedly syphilis may be considered, if its existence can be established; still, only a small percentage of epileptics give a specific history either as to inheritance or acquisition.

Autointoxication sounds well, but it seems much less impressive when we try to imagine some form of intoxication that would last a life time without manifesting any other symptom than that of occasional epileptic convulsions. Arteriosclerosis seldom is seen in children, while Gowers has a table, that shows 1087 cases out of 1450 as occurring in persons under 19 years of age. Intracranial complications exist in about 50 percent of epileptics recorded, but these are considered by many as a result rather than the cause of the malady.

A specific organism has not as yet been definitely nor positively demonstrated and such has not shown itself to a large number of painstaking thorough investigators. Intestinal irritation can, and does, produce many untoward symptoms, as the delirium resulting from irritant poisons, typhoid fever, swallowing of foreign substances, and the like, has shown. Also, reflex conditions seemingly do, at times, produce epilepsy; for, removal, of the irritations, when these are ascertained, has, at times, apparently cured the epilepsy permanently.

Diagnosis is becoming more exact, and symptoms considered as pathognostic of epilepsy are being described.

Treatment, both medical and surgical, is being rapidly improved and is becoming more definite and efficient; also, fortunately for these unfortunates, we are learning to let the bromides alone, and at the same time we are finding out the amount of havoc wrought in the past by the routine administration of "No. 1, No. 2, and No. 3."

#### Some Theoretical Considerations

Theorizing, then, I venture to conjecture that reflex conditions, particularly those originating in the intestinal tract, and more particularly those having their origin in and around the cecum, the appendix, and the colon, will, eventually be found to play an important role in the etiology of epilepsy.

Theorizing with Sajous,<sup>6</sup> let us assume that the pituitary body is the governing center of the motor area, the governing center of the adrenals and the thyroid system, the governing center of the sleep-center, the governing center of the sympathetic nervous system, the center of emotions; is, in fact, the "sensorium commune"; and then, with this as a basis, let us try to explain an epileptic seizure, and also let us try to account for some results actually obtained within the past few years.

Physiologically, we know:

1. The sympathetic nervous system holds the reins over all visceral activity, and it is called upon to direct all the vital processes that serve to perpetuate life.

2. Something beyond and greater than the will-power or the conscious self directs the sympathetic nervous system.

3. Emotional disturbances influence such processes as respiration, sleep, digestion, kidney activity, perspiration, and other automatic functions.

4. Autointoxications cause dizziness, headaches, nausea, nervousness, and other symptoms. Further, autointoxication is usually the result of constipation and intestinal stasis.

An epileptic seizure is a temporary visitation of, first, a disturbance of emotions, with loss of consciousness, a loss of sense of equilibrium, then, a motor spasm, with respiratory disturbance, muscular contractions, thermogenic disturbances associated with perspiration relaxation, and these followed by sleep and a gradual return of consciousness; the emotions being again disturbed until consciousness is fully restored and the patient again is normal.

#### The Mechanism Setting in Motion a Paroxysm

If the pituitary body is everything that we have assumed it to be—if it governs the motor-area, the sleep-area, the emotions, the sympathetic nervous system, and in that way all the functions under the direct control of the systematic nervous system—let us reason that any condition that would tend to embarrass the sympathetic nervous system will demand extra attention from the pituitary body. Let us further assume some distribution of the sympathetic nerve fibers in and around the cecum, appendix, and colon that will account for any constant and undue irritation in this region affecting the centers concerned in an epileptic seizure, and thereby reason that a chronic appendix, pericolic membrane, extensive adhesions, fecal impactions, pouched cecum, displaced colon, and so on, will call for extra attention from the pituitary body, thus embarrassing its functioning, and this in turn causing it to fail properly to direct the motor-area, the sleep-area, and the like, and the syndrome found in a true epileptic seizure must result.

All this, I know, is calling upon theory pretty strongly; but when a person tries it out and gets what seems to be permanent results in a goodly number of subjects, then

the theory certainly becomes worthy of more profound investigation.

Why an embarrassed appendix, cecum or colon should choose to manifest itself by causing epileptic convulsions, is a matter best solved by the anatomist, in his dissections. Sajous suggests a direct connection subsisting between the sympathetic system and the pituitary body. If this be true, it is easily understood that the sympathetic fibers concerned in the administration of the appendix, cecum, and colon should be ramifications from, or of, other sympathetic fibers concerned in some way with the cortex, the sleep-area, and the like, to such an extent that epileptic seizures are a natural sequence of hindrance placed upon the viscera in the region of the cecum. This would explain some of the recoveries in which the disappearance of symptoms was considered as owing to the washing out, through the colon, of a specific bacillus.

Both actual experience and medical literature convince one that pathology of viscera and of organs under the control of the sympathetic nervous system will cause disturbances of the mental processes, of digestion, nutrition, cardiac activation, and of many processes serving under the sympathetic nervous system. A direct relationship between all anatomy that serves under one center—the pituitary body—must, necessarily, exist, and the theory I have advanced seems very plausible to me. Moreover, I have relieved several cases of epilepsy; I have noted improvement in many cases of disturbed processes by the correction of conditions known to be imposing upon the terminal fibers of the sympathetic, and I have seen such conditions aggravated by imprudent work. Withal, the theory holds good, and it accounts for such conditions as nephritis, hyperthyroidism, diabetes, insanity, and even death, where such conditions

have followed closely some severe disturbance of emotions, such as anger, fright, pain, and the like. Also it accounts for insanity occurring as a complication following childbirth, for dislocated uteri, ovarian pathologies, and the like; and it accounts for the ages of insanity, which in turn correspond to some change in the functions of the various organs over which the sympathetic nervous system holds control.

Theorizing some more, then, and repeating: I believe that the success which Dr. C. A. L. Reed has obtained in his work with epilepsy is due, in large part, to his operative work having relieved a condition that was embarrassing the structures I have named as being responsible; for, if a specific organism exists, how does he explain the cessation of the seizures in those persons who have been operated upon and do still harbor the "little bug"; how does he account for the return of the seizures after the specific organism has been irrigated down the sewer, the attacks having ceased for a time, only to return a few months later? I account for the cessation of attacks by the fact that the cause of irritation has been removed; I account for their return by the succeeding formation of scar-tissue, with its contractures.

All literature dealing with epilepsy is, necessarily, theory. I am theorizing in writing this paper, but I can see the most logic in my own pet theory—as others, naturally, do in theirs—and I believe that when the problem is finally solved (and it will be) it will be solved by recognizing fundamentals that have been fairly well launched in this effort to help lift this subject out of the realm of theory.

- 1 C. A. L. Reed, *Journal A. M. A.* May 20, 1916.
- 2 F. X. Dercum, *Journal A. M. A.* July 22, 1916.
- 3 Wherry and Oliver, *Journal A. M. A.*, Oct. 7, 1916.
- 4 Caro and Thom, *Journal A. M. A.* Oct. 7, 1916.
- 5 Wm. Held, *Medical Council*, October 1916.
- 6 C. E. De M. Sajous, "Internal Secretions".

## Infections About the Rectum

By CHARLES J. DRUECK, M. D., Chicago, Illinois

[Concluded from the December issue, page 1009.]

### Ischiorectal Abscess

ALL perirectal abscesses are called ischiorectal by some physicians, but Etchepare (Tuttle) has found that less than 18 percent of them are situated in the ischiorectal fossæ.

These abscesses develop outside of the rectum and beneath the skin and fascia.

They may be single or multiple, and, when more than one, they may (and usually do) connect behind the rectum, through the space between the levator ani and the external sphincters. Even when they develop on one side of the rectum and open spontaneously or if they have existed several days, a second abscess frequently forms on the opposite side. The fossæ in which these abscesses

develop are filled with fat and as the pus fills the spaces, the fat is displaced; however, the connective-tissue reticulum remains, so that the abscess presents a honeycombed appearance. It is essential, in operating, to break down these pockets, as otherwise the contained pus will burrow and infect new areas.

There seems to be no limit to where these abscesses may travel. Frequently an abscess occurring on one side will burrow to the opposite, usually behind the rectum, and form a horseshoe- or dumbbell-shaped cavity—this giving the abscess its name. However, infection may be carried up through the fossæ on both sides and thus two abscesses develop from one source. This process usually goes on faster on one side than on the other, so that one abscess may appear several days before the other. Such abscesses may not communicate with each other.

#### The Etiology

Ischiorectal abscesses always result from an infection due to one or more of the following causes, namely: Injuries by foreign bodies, either through the rectal wall or through the tissues of the buttock; ulceration or perforation of the rectum; fissure or wound of the anus; very frequently, some minor operation about these parts. Fistulas and strictures are followed by abscesses; also squeezing superficial furuncles (probably by forcing pus into the surrounding tissues), and sometimes kicks or bruises may be the cause. Where an abscess has existed for several days prior to evacuation, a certain amount of adenitis necessarily develops in the surrounding lymph-glands, which subsequently may give rise to another abscess.

Microorganisms in these glands may remain virulent indefinitely, in illustration of which I will quote a case that was referred to me by Doctor Watts. The patient in question, a woman who was suffering from an abscess and resulting fistula, was operated upon and, so far as she knew, cured, and continued thus for ten years. At that time (June, 1904), there again appeared an abscess in the same ischial fossa. This abscess had existed for several days when I operated, on June 30, about a pint of very foul pus and necrotic tissue being evacuated. The case was treated in the manner as explained further down, and she made an uneventful recovery, the wound completely closed. Some eight months later—in March, 1905, there developed a third abscess, again in this same location, the amount of pus and debris found in it and removed this time also being a pint,

about. Examining her on May 15, I found everything apparently sound, no tenderness being evinced either at the vaginal or the rectal manipulation.

This woman has never been pregnant. The uterus is small, but in good position, she always has been regular and the sphincters are normal in tone. There is no history of tuberculosis or syphilis. I believe this is a case of lymphadenitis, although none of the glands are palpable, and I told this patient that she might suffer further recurrences of the trouble.

#### Symptoms of Ischiorectal Abscess

As a rule, ischiorectal abscesses develop acutely, with constitutional reaction, the latter sometimes very serious. Locally, there is a vague feeling of soreness within the rectum, which gradually increases to a dull ache and, later, a throbbing pain. Externally, there may be no signs at all if the infection is deeply seated; if near the surface, however, its presence is evidenced, among others, by a red or violet discoloration and by swelling. A finger introduced into the rectum and pressed out and down will usually feel a circumscribed mass of induration or fluctuation. Defecation is extremely painful; dysuria also may occur. In aggravated cases, the swelling, tension, edema, and redness about the anus appear erysipelatous, and in that case a microscopical examination of the blood and excretions is necessary to differentiate such an abscess from true erysipelas. Occasionally, in an extreme case, the inflammatory reaction not only surrounds the anus, but involves the scrotum, perineum, and thighs.

The pus found in these abscesses as a rule is thick and creamy, unless there has been an extravasation of blood, when it may be brownish, and a clot may be expelled in a lump or as debris. Shreds of necrotic tissue are frequently present in the pus, indicating a septic-anemic character of the infection. The odor is foul and gangrenous, even though the abscess does not communicate with the rectum. The gases rushing out, when the abscess is opened, do not come from within the rectum; these gases are the result of bacterial life within the abscess and the pressure is due to their pentup condition.

When the abscess is opened, either spontaneously or by knife, the constitutional symptoms immediately subside and often will have disappeared within twenty-four hours. Here, however, it must be remembered that, unless drainage of an abscess

is complete, another one will form, and the whole chain of symptoms then repeats itself. This is the case quite frequently if all the compartments are not broken down during the operation.

As to the differential diagnosis, it must be remembered that hemorrhage into the connective tissue and resulting in a hematoma may produce all the symptoms of an abscess. Unless infection occurs, there will be little rise of temperature and no systemic reaction.

#### The Treatment of Ischiorectal Abscess

Free incision at the earliest moment is the only proper treatment for these cases. Local applications have been discarded by all surgeons as useless, because, while they do give temporary relief and may retard the progress somewhat, yet, they never abort or prevent suppuration. We must never wait for fluctuation, but drain freely whenever we find well-defined induration, unless we think it is syphilitic. The wound should be wide enough to expose the whole field, thus permitting the operator to see what he is doing and to allow of free and easy drainage. Unless the surface-wound be made larger than the widest part of the abscess, pockets are sure to form and the pus go on burrowing.

After the abscess is opened, the finger should be introduced and all partitions and bands broken, thus opening all pockets. Curetting is not advised, because the steel spoon affords one no knowledge of the condition of the walls, while the educated finger distinguishes necrotic from normal connective tissue. The curette may go beyond and carry infection into healthy parts. The cavity should now be thoroughly irrigated with 1:2000 mercury-bichloride solution, then, if there is considerable oozing or bleeding, the cavity may be firmly packed and left thus for twelve or fourteen hours. At the end of that time, the packing (if used) is removed and a large rubber drainage-tube introduced. It is of the utmost importance that the walls of the cavity be kept apart and free drainage allowed.

When both ischiorectal fossæ are involved, the surgeon's ingenuity often is taxed, because the posterior connecting tract must be drained. To incise both cavities and also the posterior connecting sinus, would produce an infundibular anus. Hartmann opens the posterior cavity widely, then inserts a drain into each lateral pocket. In a case of my own, I made a curved incision that exposed the whole posterior connecting tract, then put a large drainage tube into either side.

Although wide undermining and dissection is made of the loose connective tissue, there is little danger of sphincter-incontinence resulting. The more frequent complication is, that the resulting scars become so depressed about the anus that frequently fecal matter is lodged in them and is difficult to remove.

Many of these abscesses rupture spontaneously into the rectum and form internal blind fistulæ. Even where the abscesses have been opened surgically, it is found clinically that a number of them rupture into the rectum subsequently; still, it is not good surgery to make an opening into the bowel, because of the dangers of incontinence and the prolonged convalescence which such action entails. Doubtless many of the ruptures into the rectum subsequent to these operations are due to some oversight in not breaking down all of the trabeculæ. In some cases, where the partition wall between the rectum and the abscess was quite thin and where the abscess converges to an apex, I have thought that there was danger of rupturing this partition during subsequent treatment or that there might be a very small opening through. Under those circumstances I have reinforced this wall by approximating the walls of the cavity at this point with a deeply placed fine catgut suture. Such a stitch holds the tissues for a few days, does not hold back the discharges, and is digested long before the rest of the wound is ready to close.

Every operation for abscess must include a thorough dilatation of the sphincters in order to prevent any subsequent spasm of the sphincters or rectal wall. The dilatation also permits the free egress of gas and thereby adds much to the comfort of the patient. It also prevents any collection of feces in the rectal pouch, which might cause undue pressure on the thin wall. Of course, the dilatation should be done after the abscess has been evacuated, because, if performed previously, it would increase the danger of breaking the already thinned rectal wall. Also, the pressure and traumatism might squeeze pus out into the new areas or dislodge thrombi and thus produce septicemia in remote parts.

Aside from the packing of the wound above mentioned, the only covering applied consists of a large loose perineal and anal dressing. I never use tubes or anything else inside the rectum.

#### Retrorectal Abscesses

Retrorectal abscesses develop in the cellular tissues between the rectum and sacrum

and above the levator ani; they may result from necrosis of the pelvic bones or from perforation of the rectum by a foreign body (bougie or syringe-tip), or, more frequently, following posterior proctotomy for stricture when there has been imperfect drainage. They also occur occasionally as an extension, through the lymphatics, from old fistulous tracts, the breaking down of tuberculous nodules or of gummata or some ulcerative process within the rectum. Appendicular abscesses have been found here, but such an event is very rare. Retrorectal infection frequently follows ischiorectal abscess and resection of the rectum.

#### The Symptoms of Retrorectal Abscess

The symptoms are at first vague and indistinct. There are no rigors. A dull ache in the back or sacrum and heaviness in the pelvis or sciatic region may be the only symptom. There may or may not be painful defecation. Usually there are signs of pus formation, to wit, temperature, malaise, and a sallow complexion. External palpation about the anus and perineum elicits no signs. Digital examination within the rectum, however, demonstrates a circumscribed induration back of the rectum or, later, as pus forms and the tension increases, the mass becomes painful, fluctuates and obstructs evacuation. Retention of urine also may occur. The abscess may break into the rectum or it may burrow through the levator ani, either separating or rupturing its fibers, and then opens into the ischiorectal fossa and finally out through the skin. A retrorectal abscess, in bursting through the rectum, may burrow for a considerable distance between the coats of the colon and appear as an intramural abscess. (Quénu and Hartmann, p. 146.)

#### The Treatment of Retrorectal Abscesses

A large crescent-shaped incision between the anus and coccyx affords the most thorough drainage for these abscesses. Where the walls of the abscess are well defined and covered with necrotic tissue, it may be well to curette; still, this always involves danger, as mentioned before.

After thoroughly flushing out the cavity, a large drainage-tube should be introduced and sutured to the skin; also the sphincter be dilated, as mentioned under Ischiorectal Abscess. Packing the wound prevents drainage and should be avoided, except when necessary to care for hemorrhage. Tonics, good food and plenty of fresh air are the prime re-

quirements, for these patients all need building up. The patient should be kept in his bed or on his feet during the whole period of convalescence, and he must not be allowed to sit down, as that position compresses the edges of the wound and prevents drainage.

#### Superior Pelvirectal Abscess

Superior pelvic abscesses arise, generally, from disturbances of the genitourinary or pelvic organs, or even of the abdominal organs. The levator-ani muscle forms a physiological roof of the lower pelvis, and abscesses originating below this muscle empty either into the rectum or upon the skin, and, while they may cause severe local and even general systemic disturbance, they are only rarely fatal.

Above the levator ani, there is the peritoneal cavity, and infection here furnishes a different story. Large quantities of pus may collect and burrow into the bladder, vagina, high up in the rectum, the sigmoid flexure or out of the pelvis into the groin, but very rarely does it burrow through the perineum. With the enormous development of such a pus-cavity, enough pressure is exerted upon the colon or urinary tract to produce mechanical obstruction. Such an abscess may be due to any of the causes of ischiorectal abscess, appendicitis, necrosis of the bones of the pelvis or spine, prostatitis, and ovarian disease.

#### Diffuse Septic Periproctitis

Diffuse septic periproctitis is a form of rectal infection that belongs to the preaseptic era and which never is found today, except where gross carelessness has occurred or following an injury that has been neglected. The local findings are acute inflammation about the anus and in the ischiorectal and retrorectal spaces, and it is very virulent. It may appear a few hours after the injury or not for several days, and may extend to other tissues until it entirely surrounds the rectum; it may extend even to the peritoneum.

#### The Symptoms of Diffuse Septic Periproctitis

The onset is insidious and the signs of systemic invasion come on slowly. Pain is felt in and about the rectum and gradually increases until it becomes intense, and is accompanied by a feeling of fulness and weight about the sacrum and coccyx. If the attack follow upon an open wound or operation, the discharges change to a mixture of blood and pus and are very fetid, and the whole area is acutely inflamed, edematous and swollen.

The patient becomes rapidly exhausted. Often a sharp diarrhea sets in; also difficult urination or even retention of urine. Vomiting is common and loss of appetite may be complete. Septic foci may develop in other organs, such as the heart or pericardium, and precipitate the end. The whole picture resembles that of puerperal fever. If allowed to run its course, death results in a few weeks.

#### The Treatment of Diffuse Septic Periproctitis

The treatment is one of prevention. Diffuse periproctitis should never occur in operative wounds, and the precautionary measures lie in asepsis and free drainage when operating. Proctotomy for stricture and resection of the rectum are the operations most likely to cause trouble.

If in the course of treatment the disease should occur, its remedy lies in bold free

incision of the inflamed tissues, so as to allow easy drainage, and frequent irrigation with sterile water or saline solution. Hot boric dressings also are to be used when possible. In other words, give such attention as will assist the circulation and prevent gangrene.

It is very important to determine exactly which structures are involved in the infection before we decide as to the treatment. While certain cases respond quickly to very mild therapeutic measures, others require heroic and ingenious surgery. Everything considered, the surgeon with the broadest conception of the case and the greatest resourcefulness will attain the best results.

I leave the subject, with the hope that I have demonstrated the different types of the pus collections encountered in the rectoanal region, and that this paper may, perhaps, have cleared up in the reader's mind this or that doubtful point.

## Therapeutic Indications Suggested by Sputum Findings

By G. R. WILLIAMS, M. D., Paris, Illinois

*EDITORIAL NOTE.—It is one thing to make laboratory examinations of sputa or other discharges; it is quite another thing to read the results of these examinations correctly and to draw useful therapeutic inferences from them. Doctor Williams being both, a laboratory man and a practitioner, his readings and explanations of sputum findings are of practical value.*

**L**ABORATORY-FEE tables are notoriously inconsistent. Most men charge \$1.00 for a sputum examination. In early cases of tuberculous infection, the bacillus of Koch may be found only with difficulty. It was only this morning that I searched some smears for almost twenty minutes before finding the first acid-proof bacillus. It takes almost as much time properly to test the sample for albumin. Another twenty minutes may be consumed in examining unstained sputum for elastic tissue, and so forth, and in making out the report—altogether one hour of good, hard labor. The assertion has been made that a professional man should receive at least \$3.00 per hour for his services. But, in one hour, the laboratory-man inflicts at least one dollar's worth of damage to his eyes, calls upon the resources of a \$2000-training and an equipment costing much more, furnishes some expensive stationery and adds a postage stamp for good measure. In the same hour, by properly systematizing his work, he could have studied several sections of tissue, completed

three or four routine urine analyses, and still have had time a plenty to have witnessed a good dog fight or complimented the office-girl on her new hat. Ho-hum!

Is it worth the while? The proper examination of sputum, as the above will go to show, is not, after all, a simple little stunt, easily and quickly done. It means more than a brief squint through the microscope. It means more than the frying of some minute critters on a piece of glass, a slopping and splashing of high-priced German dyes, and a bold scribbling on a report-blank of the word "Negative."

The sputum examination has become more complex and at the same time perhaps more valuable than many other precise procedures. The diagnostician concedes this, but what of the therapist? Will the study of a modern sputum-report aid the practitioner to any extent in the treatment of his lung-cases?

#### Chemical and General Tests

It has been claimed that no type of sputum is characteristic of tuberculosis infection. I

have found tubercle-bacilli in thin and thick sputa, in colorless, white, yellow, gray, green, and red sputa, in frothy and grumous sputa, and in practically every type ever described. I have found them in saliva.

The odor may have some diagnostic bearing (unless the specimen has become stale before the examination is possible), and I believe that Cabot has said that a bad odor occurs in but few pathological conditions—gangrene, bronchiectasis, and so on. A sputum with a sweet odor suggests but does not declare tuberculosis infection.

The color is of still less importance, although a red tint usually means blood. The presence of pus is usually guessed, in all probability, by the color (yellow or gray).

**Albumin.**—In chronic cases, where disease of heart and kidneys may be ruled out, an appreciable amount of albumin, detected by proper methods, usually means tuberculosis infection. Moreover, this albumin may, and often does, appear in the sputum before the most careful examination will reveal the presence of a single tubercle-bacillus. Consequently, the therapeutic indications of albumin found under these conditions are those provided by a knowledge of the existence of tuberculosis infection; and better results may be hoped for at this time than later, after the specific rod has been identified.

**Blood Pigment.**—Laboratories do not usually test for blood by chemical methods, for several reasons. The fee is not sufficient to justify the trouble, while blood is not usually found when microscopic examination fails to reveal it or there is not enough of the specimen available for this and the other work. Nevertheless, when its presence is detected, several indications are very clear. The diagnostic meaning is, probably, that there is capillary oozing coming from tuberculous lesions, and one indication is identical with that supplied by the finding of albumin. The hemorrhage itself should, and can be, treated very successfully, according to competent clinicians, by the use of emetine. According to Chauffard, about 0.05 Gram of emetine hydrochloride is sufficient and proper dosage, in these cases. Nausea must be avoided. We have long known that emetine will cause blood to disappear from the stools before the amebas have disappeared and that this, therefore, must be an independent action and one quite specific. Normal blood-serum, providing active fibrin-ferment and other substances favorable to blood clotting, may also be employed

in the treatment of occult pulmonary hemorrhage.

#### Bacteriological Examination

**Tubercle-Bacillus.**—The therapeutic indications suggested by the finding of tubercle-bacilli in the sputum are so well known that, were I to discuss them in this paper, my readers would promptly rule me out of order and refuse to read further.

**Other Pathogenic Bacteria.**—It is not always an easy matter to pick out acid-negative microorganisms and prove against them a criminal charge. Such bacteria may be identified, however, not alone in primary diseases of the respiratory passages caused by them, but we know by the symptomatology and the good results of vaccine-treatment that they are often present in pulmonary tuberculosis, as secondary invaders.

When collecting a specimen for such examination, it is well to eliminate as completely as possible all of the normal mouth-saprophytes. Before hawking up the sputum, the patient should rinse out his mouth and gargle with warm salt-water and then with plain warm water. The sputum is collected into a sterile bottle, and the purulent and mucous portions, are spread and examined. Such bacteria (and especially the predominating types identified as perhaps pathological, by virtue of their characteristic morphology) as are intimately mixed with the pus or the elastic tissue are reported as pathological, and one need fear very little that they possibly are merely bacteria from the mouth-cavity.

The treatment is, of course, mainly a problem in vaccine-therapy. Suppose, for example, that the case is one of tuberculosis infection and in which it is clinically evident (chills, fever, sweats, etc.) that there is a secondary invader and proper examination shows up the staphylococcus. Then it requires no deep process of reasoning to see that staphylococcus-vaccine is desirable. And so on.

The finding of molds in freshly collected samples of sputum is of pathological or at least semipathological importance, and their presence suggests the use of iodides.

#### Cells

**Pus Cells.**—The therapeutic indications, in the presence of cells, are suggested by the respective bacteria calling out these cells. They, being nature's protective attempt, do not, as such, call for therapeutic interference.

**Erythrocytes.**—The indications are identical with those suggested by blood-pigment.

**Heart-Failure Cells.**—Endothelial leukocytes containing hemosiderin call the attention of the therapist, as well as of the diagnostician, to the heart, and the indications are supplied by the physical examination of the cardiac region.

**Epithelium.**—The various types of epithelium that may appear in the sputum have never been observed by me to possess much diagnostic importance or therapeutic bearing upon the case. A certain amount of desquamation occurs normally from the entire tract. In some of the most severe cases, few or no lining-cells can be identified.

**Mononuclear Cells (Lymphocytes, and so on).**—As years go by, we find that clinicians are laying more and more stress upon the finding of mononuclear cells in the sputum of incipient cases of tuberculosis and upon their

value as an aid to an early decision. The indications are identical with those supplied by the finding of serum-albumin. The results of treatment are equally satisfactory.

#### Miscellaneous Sputum Findings

**Spirals.**—The finding of von Curschmann's spirals calls forth the same indications as supplied by asthmatic symptoms.

**Lung-Tissue, Caseous Masses, Lung-Stones.**—These findings signify that there is going on an actual loss of lung-tissue. The prognostic meaning is serious, although I have seen some of these patients recover. There is no known way in which we can regenerate these tissues or even aid in their repair, save stifling out the process leading to their loss. Usually this is tuberculosis infection, although either gangrene or abscess may provide lung debris.

## Severe Traumatism of the Perineum with Extensive Destruction of the Urethra

### Primary Urethral Anastomosis

By G. FRANK LYDSTON, Chicago, Illinois

A YOUNG man, twenty-five years of age, was riding at high speed upon a motorcycle. In trying to avoid a collision with an automobile, he ran into the street-curb and was thrown astride a low iron railing surrounding a grass plot. His perineum was torn through just in front of the anus, producing an extensive lacerated external wound that extended into the left ischio-rectal fossa, with severe hemorrhage.

I saw the patient twelve hours after the accident occurred, at which time the combined effects of shock and loss of blood were plainly evident. There was an elevation of temperature of 1°F. There was complete retention of urine. The scrotum, perineum, and perianal region were ecchymotic and enormously distended by extravasated blood. The irregular, obliquely transverse wound in the perineum, just anterior to the anus, was about two inches in length, and a secondary laceration extended, at an obtuse angle, from this into the left ischio-rectal fossa. Immediate operation was decided upon.

A free linear incision was made, from the perineoscrotal angle posteriorly to the margin of the anus, traversing at right angles the

wound produced by the traumatism. A large quantity of clots and extravasated blood escaped from the perineum and scrotum. A large cavity was found anterior and lateral to the rectum, the hemorrhage evidently having come from the transversus perinei and hemorrhoidal vessels. The urethra was found to be completely severed and free in its perineal portion. The perineum practically was a large irregular cavity. The bulbous urethra was completely disorganized in its posterior portion. The severed bulbo-membranous junction could plainly be seen in the bottom of the wound.

The divided ends of the urethra were found with little difficulty, brought together over a No. 30 Fr. sound, and joined by a continuous suture of fine catgut. The remnants of the bulb were next brought together in the median line over the urethra and sutured with fine catgut. The perineal wound was partly closed and packed with gauze, for drainage. A soft catheter of No. 20 Fr. size was passed into the bladder and fixed in place.

The course of healing was highly satisfactory. Primary union of the severed urethra was complete, and the catheter was

removed ten days after the operation. Six months later, the urethra admitted a No. 30 Fr. sound and conditions in every way were excellent.

As in a former, almost identical, case operated upon by me, a most interesting point was the fact that the perineal portion of the urethra was disorganized and the bulb extensively lacerated, while the membranous portion remained intact; thus showing that the point of division in traumatic rupture of the urethra is not always at a point corresponding with the subpubic ligament, the location almost universally described by the textbooks.

The result obtained in this case and in others of a similar nature shows the wisdom of performing primary anastomosis of the injured urethra as prophylactic of extensive subsequent stricture. The condition in which we find the urethra and perineum in these cases is such as inevitably results in an extensive intractable traumatic stricture when anastomosis is not performed. It is impossible, of course, to say what the ultimate results will be in any given case, but I feel confident, from my experience in instances of the kind, that anastomosis of the urethra often will not be followed by stricture later on.

## A Study of Aconite

By H. J. ACHARD, M. D., Chicago, Illinois

[Continued from December issue, page 1006]

### Unreliability of the Aconite Galenicals

AN important fact to be borne in mind is, that the galenical preparations of aconite lose their activity very rapidly, so much so that, for instance, L. E. Sayre found 9 out of 11 samples of tincture of aconite, procured from as many pharmacies, to be below standard. A number of similar reports are given in abstract in the "Digest of Comments of the Pharmacopeia of the United States of America," issued annually by the Hygienic Laboratory at Washington.

The attempt has been made to establish a chemical method of assay for preparations of aconite, in order to determine the activity of the drug by ascertaining its alkaloidal content, but these chemical processes are almost unanimously condemned as untrustworthy. Hence, in their place, Dr. H. C. Wood Jr., a few years ago, recommended a physiological method of standardizing this drug. The Smith, Kline & French Company, in their "Analytical Notes" for 1911, makes the statement that the U. S. P. assay method for aconite is not reliable; for, a number of preparations of aconite assayed in its laboratory by this method tested to full standard strength, when, in fact, the physiological test proved them to be very inferior.

The variability of the drug-strength of the tinctures and fluid extracts is so marked that the same dosage which may be given with impunity of one preparation, may prove fatal when the old stock gives out and the druggist

dispenses from a fresh supply. For this and other reasons, but especially because of the question of dosage, it would be highly desirable to eliminate all galenical preparations of aconite and to employ the crystalline alkaloidal salts exclusively, inasmuch as their action is positively uniform. The granules of aconitine hydrobromide probably answer the purpose better, more reliably, and with greater safety than do any other available preparations, while, moreover, they provide the additional safeguard of small dosage, by means of which the practitioner is enabled to administer just that amount of the drug which will accomplish exactly the desired result in the individual patient.

### The Toxicology of Aconite

It has been said that aconite is one of the most active poisons known. As a matter of fact, its deleterious action has often been experienced, more particularly when applied in the form of liniment to abraded portions of the body, as also in cases when the drug was, by mistake, taken internally in excessive amounts.

Rusby describes the symptoms of aconite poisoning as follows: "In poisoning, conspicuous modifications of the medicinal effects occur. The tingling in the extremities may become extreme. Constriction of the throat, with a sensation of strangling, is also severe and alarming. Salivation and vomiting are prompt, the latter being violent, convulsive in character, and persistent. The heart becomes very erratic, although upon the whole weakness is rapidly progressive. The respiration

is painfully depressed and convulsive. Muscular weakness, which may be quite persistent even after recovery, is added to nerve depression. After a very brief period of cardiac stimulation, the pulse becomes slower, more feeble, irregular, and dicrotic, then flickering and finally imperceptible; respiration is shallow and hurried; there are chills and subnormal temperature. There is great weakness and prostration; slight exertion provokes syncope and sometimes cardiac pain. The patient is in fear of death, restless; the face is pale, the lips are blue, and the surface is covered with cold perspiration. The extremities are cold, sometimes paralyzed, and sometimes affected with pains in the joints. The eyes are staring, glistening, and the pupils usually dilated, with more or less complete loss of sight or diplopia may supervene. In some instances, the patient becomes delirious, though generally perfectly conscious to the last; sometimes he is attacked with cramps and convulsions, and sometimes he is comatose. The urine is generally retained. Respiratory failure is the usual cause of death. This, with cardiac paralysis, is sometimes almost instantaneous when large quantities of a liquid preparation are swallowed.

"Otherwise, the above-described symptoms come on successively. The tingling and the numbness of the mouth are very characteristic and are succeeded by similar sensations over the surface of the body, especially in the hands and feet. The skin soon becomes cold, though there is more or less perspiration. There is dilatation of the pupils. There is progressive muscular weakness, accompanied by feebleness and ultimately, in fatal cases, paralysis of respiration."

#### The Treatment of Poisoning by Aconite

Although some aconitine is excreted by the emunctories, especially by the kidneys, it is, for the most part, quickly burned up in the system, so that, if a fatal result does not ensue promptly, recovery is very likely. Vomiting should be encouraged, and warm water containing iodine in potassium-iodide solution used to wash out the stomach. Atropine is a physiological antidote, as is digitalis. The application of external heat is very important. Alcohol should be given with caution. Artificial respiration may save the patient, even when death seems to be impending.

#### The Physiological Action of Aconite

In describing the action of aconite upon the organism, we follow Cushing's account.

The prickly, tingling sensation produced by local applications of aconitine is due to its effect upon the terminal organs of the sensory nerves. Aconitine evidently acts by stimulating the terminations of the sensory nerves, more especially those of common sensation, while the other sensory end-organs have not been found to be involved. This primary stimulation afterward passes into depression, which in turn induces a sense of numbness at the point of application, and, in cases of poisoning, in all the surface-areas of the body. The irritation of the sensory terminals often gives rise to a number of reflexes, such as sneezing, coughing, increased secretion of saliva, and vomiting, although some of these phenomena may be due, in part, to stimulation of the medullary centers.

The effect of aconitine upon the circulation is complex, in that the heart is affected by it directly as well as through its inhibitory nerves, while in addition the vasomotor center is stimulated. The frog's heart is first accelerated through the direct action of the poison, but this soon passes into the slow pulsations of the prolonged diastole characteristic of inhibitory action. Later, the large contractions may alternate with periods of complete quiescence in the ventricle, while the auricles continue to beat, and stimulation of the accelerans nerve is followed by periods of regular contraction. The heart-muscle seems to have lost in great part its power of conducting impulses, so that the contraction of the auricle often fails to excite a ventricular systole; but, if the conductivity be increased by stimulation of the accelerator nerve or if the ventricle be excited by a series of electric shocks, it responds by rhythmical contractions.

In mammals, aconitine produces a strong stimulation of the vagus center, causing a marked slowing of the pulse and increased dilatation in diastole and a powerful systolic contraction; the amount of blood leaving the heart is considerably reduced, and the circulation is slackened. These symptoms are due to the action upon the inhibitory centers in the medulla, as is shown by the fact that section of the vagus brings the heart back to its normal rate and extent of contraction.

In medicinal doses, the only effect of aconitine on the heart is due to the vagus stimulation, the direct cardiac action not coming into play, and the administration of aconitine in therapeutics is one of the best methods of eliciting pure and unmixed inhibition.

In fatal doses, a direct muscular action comes into play, the heart suddenly ac-

celerates far above the normal and soon becomes irregular in its action. This is due, in part, to the paralysis of the inhibitory mechanism, comprising a direct action on the heart-muscle, which probably, however, is not induced by therapeutic doses.

The blood pressure in mammals falls rapidly, because of the lessened output of the heart in the stage of vagus stimulation. The respiration is affected early, becoming much slower, while large doses cause it to become labored, the animal suffering from marked dyspnea.

The action of aconitine upon the central nervous system has not as yet been established to any extent, although there is no doubt about such an action, particularly upon the vagus center. Probably the vasoconstrictor center also undergoes some stimulation, and the vomiting which often is seen may be caused, at least in part, by increased irritability of the medullary centers. The occurrence of central stimulation is suggested, also that large doses of aconitine often produce convulsions and by the respiratory symptoms (dyspnea) consciousness is not affected directly.

The secretion of saliva is greatly increased by aconitine, owing to the irritation of the sensory terminations in the mouth as well as to the nausea present. The cold perspiration observed in poisoning may be ascribed to the collapse rather than to any direct action of the drug upon the sweat-glands, although Aubert ascribes to aconitine a powerful diaphoretic action.

Aconitine causes a marked fall of temperature, in febrile conditions and also in normal experimental animals, but the precise manner in which this action is elicited is not known. Brunton and Cash found that after the administration of aconite the temperature fell more rapidly than usual if the animal was kept in a cool bath, but that it rose more readily if the animal was subjected to the depression of the circulation from the inhibitory action. This observation, though, would seem to indicate that aconite also acts upon the centers regulating the temperature of the body.

In cases of poisoning in animals, atropine has been found to alleviate the symptoms and not infrequently to lead to recovery after doses of it that otherwise would have caused death. This improvement is more especially marked in the respiration, which may resume its normal character and persist until heart paralysis sets in. Boehm explains this fact by assuming an action on the terminations of the vagus in the lung, but it more probably is to be ascribed to the stimulant action of atropine upon the respiratory center. In these cases, the cause of death is said to be cardiac paralysis, but the stage of irregularity and the final delirium cordis certainly is very considerably retarded by atropine. Atropine appears to be the antidote from which most is to be hoped for in cases of aconite poisoning.

[To be continued.]

## The Treatment of Sore Throat

By GEORGE H. CANDLER, M. D., Chicago, Illinois

*EDITORIAL NOTE.—Sore throat, tonsillitis, pharyngitis, or just common cold; the problem is an ever present one, and one that repays careful study and investigation; also one that may serve to increase the physician's reputation—or to cloud it. The plan of treatment for this condition, as outlined by Doctor Candler, has stood the test of very many practical applications. It is the result of wide experience and is, for this reason, entitled to consideration.*

**I**N ORDER to draw the sting of criticism, I am prepared to admit that the term "sore throat" is not a scientific one, and that to attempt to lay down a treatment for such a condition is to court failure, since accurate diagnosis is essential to precise therapeutics. Nevertheless, in actual practice our patients—even though devoid of understanding of the desirability of a definite diagnosis—are acutely conscious of distress in their throats and constantly demand (as often by 'phone

or messenger as 'in person) something to relieve the soreness.

Of course, if the doctor is called upon to supply a remedy for a "quinsy sore throat," or is told that the patient has to sit up in bed to breathe and can hardly swallow anything or even open the mouth, he can dispense a mercurial purge, order several full doses of calcium sulphide and an alkaline cleansing gargle or spray (which may or may not be used) and prepare to make a domicili-

ary visit later, and lance the abscess at the proper moment. But if he is given no definite data, or even if he sees the patient when the "soreness" is beginning, he is quite likely to be unable to decide just which one of the several inflammatory affections attacking the pharynx and larynx he has to deal with.

For the purposes of this article, we shall, however, consider a "sore throat" as a simple angina or catarrhal pharyngitis. Whether there be at the time, or later, distinct involvement of the tonsils, the initial remedial measures at least will be practically identical. As a matter of fact, follicular, ulcerative, or lacunar tonsillitis is ordinarily but a part of a general pharyngitis.

On the other hand, it must be remembered that individuals afflicted with diseased tonsils are particularly prone to recurrent attacks of pharyngitis. So also are the many persons suffering from chronic nasal catarrh, especially when of the post-nasal variety; and this writer has almost invariably found either this condition or hypertrophy of the tonsils to be present in persons who are attacked, every fall and winter, by one sore throat after another.

#### The Bacteriology of Sore Throat

Unfortunately, except in the streptococcal or diphtheritic varieties of sore throat, it is not an easy matter for the bacteriologist to determine the character of the invading microorganisms. A host of pathologic bacteria are more or less constantly present in the mouth, nose and throat and naturally, when congestion occurs, any one or many of them thrive exceedingly. The staphylococcus, the bacillus of influenza, micrococcus catarrhalis, the pneumonia bacillus and even the diphtheria bacillus may be found on a swabbing from the throat of the individual who comes to the doctor with an "ordinary" acute pharyngitis. When streptococci are present in any considerable number, the condition is likely to prove extremely troublesome and involvement of the sinuses or even a fatal pneumonia may result.

Just because any congestion and concurrent infection of the pharynx may prove serious, it is extremely desirable that rational remedial measures be instituted at the earliest possible moment. Many laymen have a firm faith in the efficacy of salt-water gargles and external applications of liniments and salt pork. Unfortunately, salt water, while it may wash away mucus, does not, in its brief contact with the affected membranes, exert either an osmotic, antiphlogistic or bactericidal effect; and even the most "rusty" salt

pork that may be applied to the outside of the throat will fail to affect disease processes of the mucous membrane lining the interior.

Assuming, then, that we are dealing with a sore throat of more or less distressing character but have no definite knowledge that it is a Ludwig's or Vincent's angina or phlegmonous tonsillitis—to say nothing of diphtheria—we shall proceed to treat certain reasonably constant conditions, leaving the naming of the disease to come later, should the persistence or accentuation of the clinical picture demand the use of tongue-depressor, head-mirror, and swab.

Before proceeding, however, it may be well to remark that whenever it is possible to make such an examination and secure a swabbing early, it is highly desirable to do so, especially if there is the slightest reason to suspect diphtheria. Moreover, the wise physician will be led by the frequent occurrence of even minor sore throats in members of a family or residents in a certain limited district to investigate matters generally and insist upon a general cleanup of the premises and the institution of a more hygienic mode of living.

#### A Few Words About the Simple Anginas

The textbooks tell us that acute catarrhal pharyngitis (simple angina) is due usually to exposure to cold or dampness. One or two modern writers speak of the possible pre-existence of postnasal catarrh, and add that "it is probably caused by the action of microorganisms." Acute tonsillitis (angina follicularis), however, is described as undoubtedly being a microbic infection. Moreover, it is known to be infectious, several persons in one family often being attacked at the same time. Also, certain individuals may suffer from an attack at about the same time every year. Whether people of a rheumatic or gouty tendency are prone to contract tonsillitis or whether tonsillitis produces rheumatism and gout, still remains a mooted point.

The writer, however, has a very firm conviction that thoroughly healthy persons rarely contract a simple angina—save, perhaps, from the inhalation of irritant dust or vapors or careering around improperly clothed in "flivvers" or similarly draughty cars—and so is inclined to lay stress upon the necessity for systemic treatment in even the mildest case.

#### The Internal Medication

In all inflammations of the pharyngeal and tonsillar mucosa, treatment should be

initiated with a brisk purge. Adults should be given 1-2 to 1 grain of blue mass and soda, and 1-6 grain of podophyllin every half-hour till six doses have been taken; a few hours later a copious laxative saline draught should be administered. Children from eight to twelve years old may receive the smaller quantity (1-2 grain) of blue mass and 1-12 grain of podophyllin at each dose; those under eight, calomel, 1-10 to 1-6 grain, and podophyllin, 1-6 grain every fifteen minutes for an hour. Occasionally young children require comparatively full doses of the mild mercurial.

Aconitine is invariably indicated, and thousands of cases of sore throat have been brought to a quick and happy termination by the administration, every thirty to sixty minutes, of a tablet triturate containing aconitine hydrobromide, gr. 1-3000; bryonin, gr. 1-500; atropine sulphate, gr. 1-1500; mercuric iodide, gr. 1-100; with saccharin and aromatics a sufficient quantity. If the pharynx and uvula are extremely inflamed and dry, minute doses of pilocarpine should replace the atropine. In alternation with this formula, calx iodata (calcidin) should be administered as a matter of course. The more prolonged the contact of the drug with the affected mucosa, the more satisfactory the results. Very young and "spoilt" children may refuse to take the powder or tablet upon the tongue and allow it to dissolve there slowly, so it may become necessary to dispense a sweetened solution. Honey or saccharin are preferable as sweetening agents to sugar. Mixtures containing calx iodata should be agitated before a dose is given since the calcium—or part of it—sinks to the bottom of the glass or container.

#### A Valuable Troche

In an endeavor to overcome this difficulty, extensive experiments have been made during the past five years with a view to presenting an effective and, at the same time, agreeable preparation of calx iodata. The object has at last been obtained and a calcidin troche is now obtainable, which contains gr. 1-3 of this remedy with enough extract of licorice (in itself a really useful emollient and gentle laxative), anise and sweetener to render it really palatable enough to cause children to ask (though not "cry") for another one.

This troche, sucked slowly, produces really remarkable results and should be prescribed or dispensed wherever possible. Of course, where prompt and pronounced iodine effect is desired, as in croup, at least 1 grain of the

drug should be administered, in hot solution, every ten or fifteen minutes; but even here prolonged local effect may be maintained by the employment of the troche.

The initial purge is not sufficient and it is well to repeat the laxative saline daily for at least a week and order modified doses of the mercurial and podophyllin combination every second or third night for that period. If there is marked renal insufficiency, ten to thirty drops of the spirit of nitrous ether may be given to small children the first night and adults should receive some such active diuretic as barosmoid, with lithium benzoate. A very satisfactory combination tablet, used by this writer for many years, contains barosmoid, gr. 1-6; collinsonoid, gr. 1-6; arbutin, gr. 1-6; lithium benzoate, gr. 1-6; and oil of juniper, gtt. 1-24. One such dose should be given, with four ounces of hot water, hourly for three doses.

With these internal remedies and the application of epsom-salt compresses, seven out of ten oncoming "sore throats" can be controlled. In adult patients, especially those of known acidemic tendencies, a combination of sodium benzoate and calx iodata with nuclein, may replace calcidin alone, with distinct advantage. The ordinary dosage is sodium benzoate, grs. 5, calx iodata, gr. 1-2, nuclein, minims 5, every two or three hours.

In recognized follicular tonsillitis or other known septic conditions, calcium sulphide should be pushed to full saturation, always after thorough elimination and invariably in alternation with iodine in some form.

In these definite infections, calx iodata in combination with mercuric iodide, phytolaccoid and nuclein, proves most effective, and the calcidin and mercury compound tablet with nuclein may well be alternated with calcium sulphide. Of the former, one tablet should be ordered every three hours for four doses, then every four hours; and of the latter, 1-3 to 1-2 grain every two hours. Children under twelve require one-quarter to one-third the dosage of the calcidin and mercury combination.

#### Gargles, Sprays, and Direct Applications

Gargles and sprays are, of course, of some service, and of still greater efficacy are direct applications of some active antiseptic with a cotton mop. Unfortunately, many people cannot gargle—or think they cannot; others do not possess an atomizer; and still a greater number are unable to swab their own or someone else's throat without causing emesis. Still, wherever there is a chance that it may

be used, a mild alkaline antiseptic solution should be provided, and the patient instructed to gargle his throat and douche the nasal passages with it. By the use of the common and inexpensive glass gooseneck douche, such solutions may be placed where they will do the most good, and when even this simple contrivance is not available, a medicine dropper will do the same work almost as effectively.

The liquor antisepticus alkalinus (N. F.) and Dobell's solution are employed by a great many physicians; but, in my practice, better results, have followed the use of a combination of sodium bisulphite, sodium chloride and sodium sulphocarbolate with benzoic and boric acids, berberine, eucalyptol, camphor and menthol. In follicular tonsillitis and allied conditions, iodine or silver nucleinate (preferably the latter) should be applied at least three times daily with the swab, after the parts have been thoroughly cleansed by the free use of the alkaline solution. I have found that the latter used as hot as is tolerable proves much more efficacious than when it is applied cold or tepid; indeed, I have come to the conclusion that, regardless of the sensations of the patient,

the use of cold remedial agents should be confined strictly to the exterior of the throat. There, cold compresses will most certainly afford relief.

Of late, the much lauded Dakin antiseptic, Chlorazene, has been used in the more severe forms of tonsillitis with remarkable success. It has been found desirable to employ a very weak solution at first, one quarter of one percent proving actively bactericidal and practically free from unpleasant effect upon the patient. Too strong solutions may cause quite pronounced tingling of the throat or even produce nausea or emesis. For nasal irrigations, this strength should rarely, if ever, be exceeded.

The necessity for the use of appropriate bacterins in ulcerative or phlegmonous tonsillitis and streptococcic sore throat is too apparent to require specific mention, but these conditions cannot, with propriety, be considered as within the scope of this paper. The value, under certain conditions, of such drugs as potassium dichromate and permanganate, collinsonoid, hamameloid, hydrastoid and occasionally of helenin, must not be overlooked, but ordinarily the line of therapy laid down earlier will prove all sufficient.

## Acute Epidemic Poliomyelitis

### A Contact-Infection

By PHILIP A. E. SHEPPARD, M. D., Boston, Massachusetts

*EDITORIAL NOTE.—Doctor Sheppard's conclusions from the results of his wide experience with this serious disease, and of the careful study of his cases, are calculated to throw light upon the etiology and epidemiology of infantile paralysis in a manner that will prove of service for the prophylaxis of the affection.*

[Continued from December issue, page 988]

#### Group X.—Five Acute and Two Chronic Cases

**CASE 1.** V. T., 16 months old, the febrile onset occurred on July 20. Only paralysis of the neck-muscles resulted, but this was not noticed for two weeks after the onset.

**Case 2.** H. T., 5 1-3 years, had paroxysms of convulsions on the 26th of July, the day after his acute febrile onset, and he could not swallow. On July 29, paralysis of the right side appeared.

V. T. (Case 1) recovered three weeks after her onset; H. T. (Case 2) died within a few days.

Prior to the illness of these two children, it was noticed that a hen on the place had a peculiar distemper, chiefly characterized by paralytic symptoms in the legs and wings, she

having to be lifted into and out of the hen-house, which service H. T. (Case 2) rendered. The hen finally died. Later on two other chickens sickened, showing similar symptoms, and these were killed. Both children had played in the vicinity of the hen-house.

During May and June, the family was visited by two grownups, who early in life had had infantile paralysis and still were crippled.

The family frequently used the depot-carriage belonging to the father of another child, Case 3, in the same town.

Case 3 had her onset on July 2.

Case 4, a boy aged 2 1-4 years, had had an attack of acute epidemic poliomyelitis on July 2 and had completely recovered. The family of Cases 1 and 2 attended church and Sunday school and came in contact with

the clergyman, the father of this patient (Case 4).

Case 5. During the illness of V. T. and H. T. (Cases 1 and 2), a lady visited their home, being accompanied by her little girl, leaving her boy at home. This boy came down with paralysis two weeks later.

An interesting observation—which, however, I am unable to follow up) is the fact that this curious distemper, with paralysis, among the chickens recurred the following year. The family T. (Cases 1 and 2) reports having a recovered rooster, who was one of the group of chickens that were infected, still among the flock.

Here are some points of interest suggested in this group:

The sickness and paralysis in chickens in this group is interesting and adds to the data advanced in some of my earlier papers (1, 2, 3), where I have referred to coincidental epidemic paralysis in animals and men.

The probability of chronic cases playing the role of carriers (4) is again suggested by the facts in this group.

The infection here was conveyed by indirect contact, in one case with a hackman; in another with a clergyman; and, in the third case with a mother. All were parents of children having acute attacks. This fact, and the mode of development, suggest that the infecting virus was carried either to or from the case by means of a third person.

#### Contact With Chronic Cases

Although evidence is accumulating that points to chronic cases being potential sources of infection for individuals susceptible of contracting acute epidemic poliomyelitis (4) I advance this theory guardedly, and submit the following facts, together with brief descriptions of several cases that have come under my observation, and whose acute infections appear to be traceable to chronic cases.

1. R. H., 9 months, Irish-American. Date of onset December 1, appearance of paralysis December 3. The baby, together with his older brother was taken, on a visit, to a child with chronic infantile paralysis of eight years' standing, the latter living in the same neighborhood. The older boys played together and the child with the chronic disease fondled the baby.

2. R. J., 2 years old, Italian-American, had his onset early in October, being paralyzed simultaneously. This child was taken care of a good part of the time by his 8-year-old sister, who had passed through an attack of infantile paralysis seven years before.

3. E., 2 years old, American, date of onset, October 1, paralysis, the same day. This child was in constant contact with a sister 11 years old who is said to have had "spinal meningitis," with paralysis of the lower extremities, six years previously. The doctor is of the opinion now that this sister really had infantile paralysis at that time.

4. W. W. M., 2 1-2 years old, American, date of onset, July 29, paralysis appeared July 30. The boy is reported to have played with a child, living on a neighboring street and then recovering from infantile paralysis. The acute attack in this latter case came early in April. W. W. M. played with the child before his own acute onset, and they were constantly creeping around in the dirt together.

5. W. M., 10 1-2 years old, American, staying at time of onset, August 18, at the summer home of the family on the North Shore. Paralysis appeared August 20; he died August 22. This child had been visiting the doctor's family on the North Shore. The doctor later attended him during his fatal illness. He played with the doctor's son a week or ten days before taken with paralysis and with another boy who had been a patient of the doctor's having been treated by him for infantile paralysis seven or eight years previously.

The contact in the above groups in every case was intimate.

No positive standard is established of estimating at what stage of the illness the virus of acute epidemic poliomyelitis may be communicated from one to another individual, whether it is in the acute, subacute or chronic stage; hence, I believe that these studies should be weighed seriously when seeking to solve the difficult problem of a definite infecting period, and what, if any, certain conditions are necessary in the different stages (acute, subacute or chronic) to render the infected individual an active agent for distributing the virus among susceptible individuals in the community.

Another point of moment upon which data would be welcome is, whether or not certain predisposing factors are necessary in the person taking the infection.

#### Suggestions for Preventive Measures

As early as 1910, I offered the following advice to the Springfield (Mass.) Board of Health (1,3).

a) Absolute quarantine for at least as long as that recommended for scarlet-fever. To isolate the patient and to use every precautionary measure in regard to the attendants.

b) Isolation of infected individuals and exposed persons.

c) Terminal disinfection by local health-authorities.

d) Disinfecting-measures during the course of the disease.

e) Circularize doctors by letter and, if necessary, indicate the penalty for neglect or failure to comply with Board of Health rules.

f) Circular-letter (1) to infected families with advice; (2) to uninfected families, to institute voluntary quarantine and restrict excursions of the children.

g) Exclusion of children under 18 years from picnics, excursions, Sunday schools, theatres, playgrounds, and all places where children gather in numbers (3).

In addition I suggest:

h) Restrict the movements of the patients and of the intimate family in the community.

i) Forbid travel for the patient, until the quarantine is raised.

j) Advise other communities of the importation of exposed persons into their territory, so that similar restrictions may be instituted, and concerted, uniform measures applied by local Boards of Health.

k) Fomites, and the like, should be destroyed by fire or rendered inert by thorough disinfection, such as is practiced in typhoid fever. (Special care of the doctor's clinical thermometer to be enjoined!)

l) The usual precautionary and hygienic measures should be practiced by physicians attending cases; likewise by the attendants in the sick-room. The measures I followed out during my epidemiological study of this disease for the Massachusetts State Board of Health may be employed, viz:

Personal hygiene (2): During my investigations, I have been careful to observe the following precautionary measures, and inculcated the same in the families afflicted as well as in the physicians in charge:

1) Washing of hands with soap and water before and after handling patient or fomites, and so on. After handling the patient and washing the hands, further rinsing in mercuric chloride or bichloride of mercury, or equal parts of boric acid and chloride of lime. Final rinsing in alcohol of 70-percent.

2) Antiseptic mouthwash and gargle with hydrogen peroxide or glycothymolin, or Boremetine!

3) Eye-douche with boric acid.

4) Nasal spray with some menthol preparation.

5) Finally, after seeing the last case for the day, all clothes worn, and articles used,

including the bag in which they were carried to the various patients' houses, should be placed in a sealed locker and fumigated over night with formalin-gas.

m) All bed-linen and garments used by the patient should be disinfected, as is done in the case of diphtheria.

n) The culinary and table utensils of the patient and attendant should not be used by the other members of the family during the duration of the case.

o) The sick-room should be screened from biting insects, animal pets must be excluded.

p) The local health-authorities should be notified immediately of a new case, and they should see to it that all quarantine measures are instituted and maintained, and also will determine when the quarantine is to be raised. (Possibly in three weeks.)

q) Quarantine of chronic cases of poliomyelitis during any acute upset, gastrointestinal or other infectious process, since it has been shown (4) that they are probably capable, even after their recovery, of becoming reinfected with the virus and of developing a recurrent attack, and thus becoming a source of danger to others during these upsets.

And as an additional precautionary or prophylactic measure, I am using daily, in my diet, a vigorous culture of the bacillus bulgaricus, as put out by a certain up to the minute bacteriological laboratory, in the preparation of Bulgarian fermented milk and in a solution of sweetened warm water (90° F.) as a gargle and mouthwash. This is a pleasant, simple, and efficient innovation, I think, in this connection, about which I have already said a little (5) and hope to say more soon.

In conclusion, I will say that, if the facts set down in this and other papers referred to, are borne in mind, I think, we shall lend our influence in spreading the information that acute epidemic poliomyelitis is very contagious, and I would counsel every persistent precautionary measure at all times.

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2. Sheppard, Philip A. E., "A Study of an Epidemic of Infantile Paralysis in Springfield, Mass., in 1910." In "Infantile Paralysis in Massachusetts During 1910," pp. 95 to 140. Boston, Mass., Wright and Potter Co., State Printers.

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4. Sheppard, Philip A. E., "Recurrent Attacks of Infantile Paralysis." *Western Medical Times*, Vol. XXXVI, No. 3, Sept., 1916.

5. Sheppard, Philip A. E., "Abortive Poliomyelitis," *Amer. Jour. Clin. Med.*, pp. 674 to 676, Aug., 1916.

# What the General Practitioner Can Do in the Treatment of Chronic Diseases

GEORGE F. BUTLER, M. D., Mudlavia, Indiana

[Continued from November issue, page 915]

A PATIENT having dyspepsia should separate the proteids still more completely from the farinaceous foods, and for two reasons; namely, the time of digestion is different for the two kinds, and the sections of the digestive tract in which digestion takes place also are not the same for the two.

Breakfast for the dyspeptic should consist predominantly of stale bread, dry toast, or rusks, with a very little butter (which latter ought to be of the best quality obtainable). If the digestion be in a particularly bad state, hot milk may be poured over the bread, instead of using butter. As a rule, more milk may be taken with the toast, while many patients are able to add to it, without injury, enough of tea, coffee or cocoa to flavor it. A soft-boiled egg or a piece of fish may be added for those patients whose stomachs can bear them.

The noon-meal should consist of proteid food, chiefly, such as fish, fowl, eggs or meat, together with stale bread. Boiled whiting, with its soft and easily disintegrated fiber, is one of the most readily digestible of fish. Codfish is somewhat tougher and requires more mastication, but it is good here. Sole, either boiled or broiled, is very acceptable, care being taken to remove the skin as well as the bones, if it is fried. Sauces with fish are likely to make trouble, as they contain fluid fats; so that it is advisable to eat fish-meat simply with salt and stale bread. Often it is a good practice to spread a little good butter on the bread and take that with the fish. Fowl, also, may be eaten with stale bread. Eggs, though frequently they are likely to induce biliousness, may sometimes be tolerated if made into omelet. A chop or steak, if thoroughly masticated and if its stringy parts are rejected, sometimes is allowable.

Although, as I have said, the best time for a dyspeptic to drink water is an hour *before* meals, and then to have it hot, many patients either can not or will not do this, and these persons should sip a half-tumbler of water after their luncheon. Many find effervescent water more palatable and more stimulating than plain water, and this may be given them, provided it does not induce flatulency—

which, however, it is likely to do. As a rule, dyspeptics, should not take wine or beer.

For an afternoon lunch, hot water, flavored by floating in it a piece of lemon, and a small piece of biscuit may be taken; or, in place of the hot water, there may be substituted weak tea (this being more palatable) or milk and water.

The evening-meal may consist of foods of the same nature as those taken at noon.

It is a good general rule for dyspeptics to reject all skins, bones, strings, stones, and seeds. Fish-bones and the bone chips that frequently occur in hash and curry act as irritants, and skins of every kind are indigestible, whether they are from fowl, fish, fruit or vegetables.

Fruits, as a rule, should be eaten apart from meals. They are of great value in certain diatheses, notably the uric-acid and scorbutic; also, they agree well with persons of the bilious and lymphatic temperaments.

The dyspeptic should partake of green vegetables and tubers, properly cooked, in the place of fruits because the latter often cause flatulence. For the purifying of the blood, the alkali-salts contained in these vegetables are of considerable value.

Flesh-foods usually are not advisable for dyspeptics, and are better omitted.

## Rest, Physical and Mental

Bodily fatigue and mental worry should be avoided before meals. Digestion often is impaired by the walk home that some people fancy is a good means of working up an appetite, for, the extra labor is too much for the patient who has been at his vocation all day. After arriving home, he should take a rest of at least twenty minutes before eating, especially if he is a dyspeptic or if he is of middle age or older. Of course, if the occupation is of a specially harassing nature, it may sometimes be of use for the patient to walk instead of riding home, for the exercise may prove beneficial to the extent of driving away or diminishing worry and anxiety, and, if the rest can be secured at home, the extra labor may be more than made up by the mental relief obtained.

The meal having been disposed of, both the mind and body require rest for at least a

half hour, with a nap, if possible. Or, pleasant conversation, light reading or a pipe may prove beneficial. Active exertion, either of body or mind, is injurious.

#### Drugs for Dyspepsia

The remedies that have been employed in the treatment of dyspepsia and other stomach ailments, though they are almost innumerable, may be divided into about six classes. These are: (1) Those that stimulate the secretion and movements of the stomach; (2) those, that through their local action, exert a sedative effect upon the stomach; (3) those which act upon the general nervous system; (4) those supplying digestive material; (5) those which lessen abnormal decomposition; and (6) those which aid in elimination.

One of the best stomach stimulants is sodium bicarbonate, given fifteen, twenty or thirty minutes before meals; and, with it, may be combined some bitter. Rhubarb is another good stimulant, the old-fashioned plan being for the patient to chew a piece of it, from which he obtains a solution of its active principles in the alkaline saliva. The modern method is, to swallow the rhubarb at a gulp, with an alkali, before meals.

When an alkali is required, sodoxylin is another excellent remedy to use. A good old combination is bismuth subnitrate (or the carbonate), Gm. 0.33 (5 grains); sodium bicarbonate, Gm. 0.33 (5 grains); rhubarb, Gm. 0.06 (1 grain); nux vomica, Gm. 0.03 (1-2 grain); cinnamon, Gm. 0.09 (1 1-2 grains); this powder to be dispensed in a cachet, two such cachets to be taken, in a mouthful of water, three times a day, twenty minutes before meals. If desired, the amount may be doubled and put into one large-sized cachet, to contain 0.6 Gram (10 grains) each of the sodium and bismuth salts; the proportions of the several ingredients may be increased or diminished, as demanded.

Notwithstanding the great deal that has been written against the use of vegetable bitters, they certainly appear to be of value in many cases.

In *atonic dyspepsia* of the kind that we see so frequently in hospital-patients who complain of much flatulence and who present a definite group of symptoms, quassia and the arsenate of quinine, given before meals, seem to be of more benefit than the alkalis. An effervescent saline laxative in the morning greatly aids here, if constipation is present.

In *irritable dyspepsia*, one of the best remedies is bismuth, given preferably in the

form of powder. If, as sometimes happens, the patient objects to powders, the liquor of bismuth may be given, in doses of 1-2 to 1 dram (2 to 4 mills), with a carminative water and some aromatic spirit of ammonia.

If the taking of food is productive of much pain, we may add 20 to 30 minims of the compound tincture of camphor to the bismuth mixture; and, when the pain is great and there is acidity after meals, we should dissolve a teaspoonful of sodoxylin in water and have the patient sip of this until the pain is relieved.

To strychnine the first place is accorded among those drugs that assist digestion through their influence upon the nervous system. It is an exceedingly valuable adjunct to the antidyseptic remedies in the majority of cases of feeble digestion.

For the supply of digesting material, the most important substances are, hydrochloric acid and pepsin, with rennet not far behind in value. A solution of 0.6 Gram (10 minims) of diluted hydrochloric acid or of dilute nitrohydrochloric acid seems to assist digestion where there is a deficiency of only the acid secretion, and it is often given with a bitter shortly before meals; also, with only the addition of strychnine or with the further addition of pepsin, it may be given, with advantage, directly after meals.

The precise role of rennet in ordinary digestion is not known, and, though in some cases it seems to be deficient in the gastric juice, there is no doubt that it has some important function in this connection.

For the prevention of decomposition in the intestines and of flatulent distention, the sulphocarbolates are good, as they also are among the best remedies that tend to prevent fermentation. Creosote and oil of cassia both have a similar action.

The bowels must be kept regular, either by use of some anticonstipation pill, or, if they are sluggish in action, by calomel, bile-salts, and podophyllin, followed by a saline laxative. Also it is important that the liver be unloaded. Though the nature of the action of calomel, podophyllin and of bile-salts upon the liver is not thoroughly understood, yet, I have no doubt, from my clinical experience, that they are of great importance in overcoming many of the symptoms of dyspepsia.

When indigestion or its consequences are due to mental influences, the depressing cause should be removed, if possible; but, if this cannot be brought about, the patient should be given a change of scene and air,

and should take outdoor exercise. For decreasing the sensibility of the nervous system to worry, and also to produce sleep, potassium bromide is useful, either alone or combined with the bromide of ammonium.

Mental depression may be due to disorders of the liver as well as to trouble of the sexual organs, and sometimes it is difficult to distinguish between depression that may be called purely mental and that which is due to physical conditions; still, either class may produce digestive derangement. Whether the sexual troubles give rise to mental depression, through the medium of the digestive system, or whether they disturb the digestion through the emotions, is hard to say; but, however that may be, the dyspepsia due to uterine and other genital abnormalities is a serious matter.

Uterine dyspepsia presents the same symptoms that accompany nervous dyspepsia, namely, epigastric pain, acid eructations, and sometimes vomiting after meals. The bowels usually are much constipated. The first thing to do here is, to remedy, if possible, the state of the uterus; the next thing is, to decrease the nervous excitability by the employment of bromides or other sedatives; and the intestines should be cleared out by means of purgatives and kept clean by the use of the sulphocarbolates.

In order to understand the pathology of indigestion and the action of remedies, we must bear in mind the intimate relation existing between the alimentary canal and the other parts of the body. Altogether too many persons regard digestion as a process going on in the intestinal canal only.

## BEYOND THE THRESHOLD

### A NEW YEAR MUSING OF MAN-ALIVE

Set down by RICHARD WIGHTMAN

*I HAVE passed the door which opens to another year. The latch of the door was lifted for me by hands not my own. I could not stay in the old year any more, even if I tried. I loved its suns and snows and even its storms and darkness were good for me.*

*I do not mind now the sting of the pain-dart which struck me, nor am I ashamed of the resultant scar. And then, sometimes, there was the touch of gentle hands and the kinship of understanding hearts! These were my wine in weariness.*

*All that is past—all save the memory of it and the effect of it; these abide—a part of the fibre of my latest self.*

*But for this other year—the strange, new one—what? I ought not to ask. A veil is over its days, mercifully. I only know that I have essayed it; that it is but a little bit of the whole span of life, an annual unit in the sum of time; and that in it lie my further adventure and opportunity.*

*I shall go on. From their height the stars will see me, the earth will prove itself my friend all over again, and I shall meet my brothers on the way.*

# What Others are Doing

## SUBLINGUAL MEDICATION

The hypodermic syringe has become firmly established among general practitioners as a trusted and reliable means of introducing remedies, particularly in emergencies, when rapid effects are desired—provided the syringe works and the needle is not clogged. Assuming that every medical man keeps his hypodermic syringe in perfect condition and is able to administer a dose of medicine inside of a few minutes—when this is necessary—it, nevertheless, is of interest to know that a substitute method is suggested (and not alone for emergencies) that is claimed to be even more prompt in its effects, and certainly is more simple and easier of application.

We refer to sublingual medication, a method proposed by W. Paulson some thirty years ago and now again urged upon the attention of the medical profession (*Practitioner*, Oct. 1916, p. 389). Doctor Paulson claims that immediate absorption takes place in the sublingual space, which is always smooth, never becoming furred like the tongue, and never covered with mucus as the stomach always is when in active rebellion or, maybe, masked by half-digested food. Particularly

the effects of alkaloidal remedies—for instance morphine and atropine, to relieve pain and shock from injury, or apomorphine, to induce vomiting after the ingestion of poisons—present indications for this form of medication.

This view is cordially supported by Doctor Cooper in the November number of *The Practitioner* (p. 493). The latter found sublingual medication effectual and prompt in action in many cases where the introduction of medicines into the stomach was impossible. He points out that no apparatus is required, that there is no need to sterilize or for other precautions, and, that, moreover, medicines can be given in this way by any attendant other than the doctor himself.

The present writer often has ordered alkaloidal granules to be placed in the mouth and allowed to dissolve there for prompt absorption, although he has not specified the sublingual space in particular; but the method appeals to him as peculiarly fortunate, and

he believes that it is of special applicability for children, who are so liable to be terrified by hypodermic injections.

## THE USE OF PITUITRIN, AND CAUSE OF FAILURES

An illuminating article upon the treatment of weak labor-pains is contributed by Stephen Rushmore to *The Boston Medical and Surgical Journal* for November 9, 1916 (p. 659). Besides a number of mechanical measures resorted to for stimulating uterine contractions, the author discusses the various drugs employed for this purpose, particular attention being paid to quinine, ergot and its principles and derivatives, and to the preparations of the posterior lobe of the pituitary body, the last-mentioned being discussed in considerable detail.

The pituitary substance is prescribed by Doctor Rushmore in doses of about 1-10 of a Gram, this corresponding approximately to 1 mil (1 Cc.) of the liquid preparation—although the strength of the latter, as made by different manufacturers varies to some extent. Increasing the dose above this quantity does not seem to enhance the action. Variations in effect seem to depend upon variations in the susceptibility of the patient. Thus, if the contents of a 1-mil (1 Cc.) ampule be divided equally between two parturient women, there may be a marked effect in one and no effect whatever in the other.

Given by mouth, no action is produced. Ordinarily the remedy is given either intramuscularly or subcutaneously, little difference being observed as to the results obtained, although as a rule the intramuscular method is preferred. It should be introduced intravenously only in an emergency, for the purpose of checking postpartum hemorrhage; for, its action when thus administered is immediate, often stormy, and accompanied by unpleasant although not serious general symptoms. When injected intramuscularly, the action is developed in from five to fifteen minutes, as a rule. However, if the first dose produces no effect, a second may be admin-

istered in half an hour. If this second dose is without effect, then the woman may be considered insusceptible to the remedy and no further injections should be made.

Doctor Rushmore says that all failures with pituitrin should be studied with great care. The remedy should not be considered as a panacea, inasmuch as failures do occur and bad effects also not infrequently are observed, among them, pallor, faintness, cyanosis, and irregularity of the pulse. The most serious danger to be guarded against is, rupture of the uterus, although of rare occurrence, being a consequence of a neglect to determine beforehand whether the child can be born through the birth-canal.

The failures may be divided into two groups; namely: (1) Those cases in which the injection of the drug is not followed by uterine action occur chiefly in elderly primiparae and in women with undeveloped wombs. (2) Those cases in which the resulting contractions are not of sufficient force to expel the child; these include breech or face presentations and small pelvis (when increased expulsive force is required), exhaustion of the mother from undue prolongation of labor, and attacks of eclampsia. In the latter condition, as Doctor Rushmore points out, some have expressed fear of the increased blood pressure, but this danger, he thinks, is not great and is less than that from prolongation of labor in these cases.

There prevails a wide difference of opinion as to the desirability of using pituitary extracts after the birth of the child. Rushmore, himself, concludes that undoubtedly the solution is of value, intravenously injected, in postpartum hemorrhage, in that case acting promptly and thereby removing the need for intrauterine manipulation—to that extent diminishing the danger of infection.

#### OUR BACKWARD JAILS

In a letter published recently in *The New York Evening Post*, Dr. Beverley Robinson, of New York, pointed out the deplorable condition of many of our county jails. Among other things about them, he says: "Lack of occupation, of exercise, and of fresh air, insanitary conditions, filth and vermin are all too common. Morality, if it exists at all, is at a very low ebb."

Every physician who has anything to do with the average county jail knows that this statement unfortunately is all too true. From every point of view, these institutions

are a source of shame to every good citizen, and especially to the members of our profession.

A man who upon being arrested is sent to jail is not a convicted criminal—he is a person who is under suspicion and being detained until either his guilt or innocence can be demonstrated. But, the law is dealing with a man or a woman, who in many instances comes from a clean home and moral surroundings, enmeshed for a time, perhaps, by criminal or immoral influence, but, nevertheless, is deserving of a kindly, humane treatment.

"To have anything permanent in good management of jails," continues Doctor Robinson, "they should be under state control, and work should be provided for those held in confinement. The work best suited to the prisoners is work upon a farm—a small farm should be a part of every jail in the state."

While farm work is not possible in some of our jails, notably in our large cities, there is no reason why fairly congenial occupation of some kind cannot, and should not, be provided in every large penal institution. The involuntary inmates should not be housed up in cages like mad dogs.

#### THE USE OF ACONITE CONTROLLED BY THE THERMOMETER

An extremely useful suggestion regarding the desirability of controlling the prescribing of aconite-preparations, in doubtful cases of inflammation, by means of the clinical thermometer, is offered by Sydney Ringer, in his "Handbook of Therapeutics," New York, 1890, from which we quote.

"In the treatment of inflammations, the thermometer and aconite should go hand in hand. If the symptoms and physical signs are not sufficiently developed to enable us to decide whether or not an acute inflammation of some deep-seated part has set in, the thermometer will often dispel the doubt. No acute inflammation can exist without a simultaneous rise of bodily temperature. Hence, when careful investigation discloses a normal temperature, the case is not one for aconite; while, on the other hand, if the other symptoms doubtfully indicate an inflammation, a rise of the mercury will add considerably to the probability that we have to do with an inflammation; thus indicating the advisability of employing aconite.

"Sometimes the throat is swollen, very red, and presents the appearance of an ordinary sore throat accompanied by fever; and yet,

fever is absent. Without the thermometer, we are unable to discriminate with certainty these two kinds of inflamed throat; and this inability to distinguish the one from the other, no doubt, has often led to the mistaken prescribing of aconite, and so brought discredit upon this valuable drug. The nonfebrile form is affected but little, if at all, by aconite.

"Again, systematic employment of the thermometer after scarlet-fever is very important; for, as is well known, such a patient then is liable to acute inflammation of the kidneys, the first onset of which is at once indicated by a rise of the body-temperature. It is well, therefore, during the convalescent stage, to direct the nurse to take the temperature night and morning; and if this should rise above normal to give aconite at once, so as not to allow some hours to elapse before the patient can be visited by the medical attendant. It is true, the fever may depend upon some cause other than inflammation of the kidneys; but even then it probably will be inflammatory in character, arising from gastric catarrh, overfeeding, and the like, so that, at all events, aconite is in place."

#### **TYPHUS FEVER AND THE LOUSE— FAILURE OF VACCINE TREATMENT**

Our readers will recall that in 1915, Dr. Harry Plotz, of Mt. Sinai Hospital, New York City, announced the discovery of the organism that causes typhus fever. Plotz, in collaboration with Doctor Olitzky, also demonstrated that the same microorganism is responsible for Brill's disease, the latter being a modified form of typhus. These two investigators also produced an immunizing vaccine, and, in order to test it, Plotz went to the Balkans, while a commission consisting of Olitzky, Husk, and Denzer was sent to Mexico, there to try out the immunizing properties of this bacterin, as also to test the theory that typhus fever is transmitted only by the body-louse.

Now, in a paper, lately published by Dr. Horace C. Hall (*Milit. Surg.*, Nov., 1916, p. 474), we are informed that Olitzky and Husk were both attacked by a most virulent form of typhus during this visit to Mexico and were brought to Laredo for treatment, where soon after Doctor Husk died from some intervening complication. Both of these men had been immunized against typhus with the Plotz vaccine.

In explaining the failure of this vaccine, the statement is made that it was prepared

from organisms derived from patients suffering from Brill's disease and it was erroneously assumed that these organisms were of only a low degree of virulence, and that for this reason the bacterin produced from them was insufficient to protect against the highly virulent Mexican-typhus germ.

In his paper, Doctor Hall raises serious doubts as to the louse being the only carrier of typhus. We quote from his article as follows:

"Doctor Husk, who had lived in Mexico many years and treated the disease during that time, described to me the precautions he had taken to obviate any possibility of his contracting the malady. These precautions were as follows: Silk undergarments, as it is well known that the body-louse will not deposit her eggs on silk; rubber elastics around the ankles, where the underdrawers had been stuffed into the socks; also rubber gloves coming up over the shirt-sleeve, and elastic bands to make the union impassable to vermin; three baths daily, the last of which was of gasolin; clean sheets daily on beds brought from the United States on a private car, fumigated and disinfected by the writer with sulphur, kerosene, and a 10-percent creoline mixture. Doctor Husk, only a few weeks before making the trip into Mexico, had his turbinate bones removed. Doctor Olitzky, while working in the laboratory, was so unfortunate as to receive a scratch from a broken culture-tube in which there were colonies of the bacillus and he attributes his infection to this source. Doctor Olitzky also suffered from nasal troubles and had had his nares cauterized—in fact, went to Mexico with a mild form of chronic nasal catarrh."

It is assumed that the infection may have reached the blood through the nasal wound. Doctor Hall also suggests that bedbugs and head-lice, as well as body-lice, should be viewed with more than suspicion as possible carriers of the infection. He offers a number of facts in support of this contention.

#### **DEATH OF PROF. ALBERT NEISSER**

Another of the great medical men that have passed away since the beginning of the war is Professor Albert Neisser. Like so many men who have become distinguished in medicine, Neisser was of Jewish origin. His great discovery of the gonococcus was made in 1879, when he was only twenty-four years of age. Neisser was born in Germany, near Breslau, January 22, 1855, and died on July 30 last. The cause of his death was sepsis

following an operation for stone in the bladder.

#### BACTERIN TREATMENT OF TYPHOID FEVER

A study of the bacterin treatment of typhoid fever which will prove a bomb in the camp of those who are staking everything on it, is contributed by Captain T. H. Whittington of the Royal Army Medical Corps to *The Lancet* of April 8, 1916 (p. 759). Captain Whittington presents a carefully analyzed report of his experience with 230 cases of typhoid fever, of whom one-half (115) were on vaccine treatment, the other 115 being controls who received no vaccine. In order that the comparison might be absolutely fair, certain standards were laid down:

1. It was determined by laboratory tests that all the cases were true typhoid, and all paratyphoids were excluded.

2. It was definitely ascertained just how many of these patients had received protective inoculation.

3. The cases were classified into corresponding groups of the vaccinated and unvaccinated according to degrees of severity.

4. All the cases occurred in the same season of the year and in the same climate and locality.

5. All of those compared were of approximately the same age and previous health.

6. Other modes of treatment, aside from the use of bacterins, were practically identical.

Without going into details regarding the method of treatment, dosage of vaccines, and the other therapy employed, we present briefly the results obtained:

First, the total mortality from the 230 cases was 52, or 22.6 percent. There were 29 deaths among the vaccinated, i. e., 25 percent, and 23 deaths (or 20 percent mortality) in the unvaccinated.

The average length of the febrile period was 27 1-2 days; or an average of 29 days in the vaccinated cases and 26.6 days in the controls.

Relapses occurred in 22 of the cases—12 among the vaccinated and 10 among the unvaccinated.

There were 111 complications or sequelae recorded, 58 of these occurring among the vaccinated and 53 among the unvaccinated.

There were 30 hemorrhages, and of these 17 occurred in the vaccinated and 13 in the controls.

Captain Whittington reported many of these cases in great detail. His conclusion

is that the vaccine treatment of typhoid fever is disappointing; that it does not shorten the fever nor reduce the number of complications; and that there is a decided suspicion that it increases the incidence of hemorrhage.

It is only fair to state that Whittington's conclusions are not in accord with those of many other physicians who have had extended experience with the typhoid bacterin. The consensus of opinion undoubtedly is that this bacterin is of value, although probably of considerably less value than is claimed by its ardent supporters and admirers. It is a safe conclusion, however, that while prophylactic vaccination will remain one of the great specific remedies of universal application, the curative bacterins will never replace other established therapeutic measures, such as the use of the intestinal antiseptics, and particularly the sulphocarbolates, whose value has been shown again and again in the experience of the thousands of practitioners who have used these drugs and are using them every day. We still pin our faith to the intestinal antiseptics as the remedies of greatest value in typhoid fever.

#### DISINFECTING UNIFORMS FOR PREVENTING WOUND INFECTION

Probably every reader of this journal will remember the story of the English nurse who began the study of the terrible gas-bacillus infections which a few months ago were so common and so deadly in France. This young nurse, who works in a military laboratory in France, becoming convinced that injections of quinine into these infected tissues were effective in checking the process, deliberately inoculated herself with the specific bacillus aerogenes and then submitted herself as an "experimental animal." Happily, she survived.

Another woman worker in this field is Mary Davies, a bacteriologist working under the Goelet Research Fund in a military hospital in France. This woman observed so many cases in which wound infection, especially with the gas-bacillus, followed implantation of fragments of clothing in wounds, that she undertook a series of experiments with a view to rendering soldiers' clothing antiseptic. (See her paper in *The Lancet*, Sept. 30, 1916, p. 603). A variety of germicidal agents were tried, and finally pyxol (a combination of cresols and soft soap) was settled upon as being, all things considered, the most satisfactory. Treated and untreated cloth was implanted in the flesh of guinea-

pigs, then numerous careful tests were instituted to determine the result.

The long and short of the story is, that Miss Davies has demonstrated experimentally that cloth treated with pyxol can be implanted in the flesh without producing any local reaction whatever; also, that this fabric remains sufficiently antiseptic to inhibit the growth of spores and bacteria even when implanted in culture-media favorable to their growth. Some degree of bactericidal action is retained after at least a month's exposure to sun, storms, and rain.

Miss Davies now believes it quite possible for a soldier's clothing to be impregnated with this antiseptic (which, by the way, is cheap and easily used) and that such impregnation not only will very largely prevent wound infection of the deeper tissues, but will also prevent the infection of open wounds even if both clothes and skin are extremely dirty; while, at the same time, it is probable that body-lice would find the constant diffusion of the pyxol inimical to their well-being and comfort.

One of the interesting results of the war, from a psychologic point of view, has been the intensity of interest and singleness of purpose, as well as the growing resourcefulness of many of those engaged in it on all sides. To the war and its successful progress, millions of men are now giving everything they have and everything they are—even to life itself. In no phase of life of the warring nations, is this more manifest than in the development of the practical sciences that have done so much to modify military practice.

#### QUININE AND UREA HYDROCHLORIDE IN SCIATICA

Six cases of sciatica were treated by J. R. Garner (*Journal-Record of Medicine*, May, 1916) by injections of quinine and urea hydrochloride, using the drug in ampule form and introducing 10 mls (Cc.) of a 1-percent solution. The technic was as follows: Under rigid asepsis as regards the syringe, site of injection, and the operator's hands, the point of the needle was first thrust through the skin in the selected locality and a few drops of the solution expelled. Then after a few moments the needle was pushed into the nerve, and without causing great pain; the content of the syringe was now injected slowly. The injection should be made at the point where the great sciatic nerve

emerges from the pelvis through the great sacrosciatic foramen.

#### RUBELLA OR GERMAN MEASLES

Among the acute exanthematous diseases, there is one that is frequently mistaken either for measles (rubeola) or scarlet-fever, and which may not be recognized at all in mild cases. It is but little over a century ago that it was first described as an independent affection, and even to this day it appears to have attained only to a secondhand importance, as it were; a fact suggested by the variety of names by which it is known. We refer to "roetheln," or German measles, also called, among many other names, scarlatiniform measles (or measles-like scarlatina), false measles, and hybrid scarlatina.

In a study of this affection, Dr. Edward Gray (*N. Y. Med. Jour.*, July 15, 1916) expresses the opinion that rubella is the best name for it, because the disease is neither measles nor scarlet-fever, but is a distinct infectious fever, although it is characterized by an erythem. [While agreeing with Doctor Gray in preferring the name rubella, we would suggest that the designation rubeola for measles be given up, in order to prevent any confusion. The older name of morbilli, we think, would be preferable as a technical term for measles.—Ed.]

Rubella is an independent contagious eruptive fever, specific in its cause and clinical manifestations and epidemic as to occurrence. It presents characteristic features in incubation, invasion, eruption, and clinical course. Although children are affected principally, rubella is, by no means, a children's disease exclusively; indeed, among 283 cases observed by Doctor Gray, there were 40 adults between 20 and 50 years of age, most of whom came under his care during 1911.

While the virus of rubella has not as yet been discovered, its cause undoubtedly is a specific microbe. The disease occurs in epidemics, affecting mostly the families of the better class, also the inmates of institutions— orphan asylums, for instance. The contagion probably resides in the secretions of nose and mouth, and certainly in the desquamated epithelium. The period of contagiousness extends, probably, from the first outbreak of the rash until desquamation is nearly completed.

Recovery from a single attack of rubella generally is believed to produce immunity against another one, and it is so stated in the

textbooks; but, in Doctor Gray's experiences, one-third of his patients, seen in 1908, or 21 cases out of 63, had another attack of rubella in 1911. Of these 21 second attacks, 5 occurred in adults. It is of interest, however, to learn that none of these second attacks were severe and fatal and that seemingly at least a partial immunity had developed.

No immunity against rubella is produced either by measles or scarlet-fever, neither does immunity against rubella include protection against these two other exanthemas.

Without entering in great detail into the clinical history of rubella, it may be stated that it presents many points of similarity to the exanthematous diseases in general. The period of incubation, however, is longer than that of scarlet-fever, namely, twelve or fourteen days; also, the prodromal symptoms may be entirely absent, the child having gone to bed perfectly well and waking in the morning with the rash fully developed.

The rash first appears on the neck and along the lower jaw, extends from the nostrils and mouth to behind the ears, and spreads rapidly downward over the entire body. It consists of very minute macules or maculopapules of a pink or pale-rose color, with areas of untinged skin between; rarely being confluent. The exanthem may begin to fade in a few hours, then may reappear over a given area. The eruption continues to extend during from one and a half to three days; it is rarely accompanied by itching. The fever is slight, rising above 101° F. only in exceptional cases, and then it is usually due to complications.

Aside from the characteristic rash, the most notable symptom of rubella is a swelling of the postauricular, postcervical, postoccipital, and inguinal glands. This swelling is so characteristic that it may be called pathognomonic. It occurs early and may be detected several days before the rash appears. At any rate, it is important in establishing the differential diagnosis.

For the treatment of rubella, Doctor Gray finds that the one drug which may be commended for its good service is calcium sulphide, and this should be pushed to full effect.

#### THE TREATMENT OF RUBELLA

In the article from which the foregoing abstract is taken, Dr. Edward Gray (*loc. cit.*) has outlined such an excellent treatment for rubella that we will repeat it in full. We

believe that this same treatment is appropriate, suitably modified, in the other exanthematous diseases. Doctor Gray says:

"The one drug which may be commended for its service is calcium sulphide; but it must be in efficient preparation, well protected from the atmosphere. The doses will be according to the patient's condition rather than the age, and will vary from 1-6 grain to 2 grains or more; and the interval from three hours down to a half hour. The object is, to render the blood an unwholesome field for the growth of the specific virus. For restlessness and fever, sweet spirit of niter, in sweetened water, alone or combined, sometimes with Spiritus Mindereri, will be useful. Sponging with epsom-salt solution, 1 ounce to 16 of tepid water, is grateful and soothing.

"If the temperature should run high and internal congestion be present, no remedy acts so well in my hands as veratrine; a pellet of 1-125 grain, every half hour or twenty minutes until an impression is made and then the interval increased, according to the judgment of the physician. Intestinal catarrh may require treatment with calomel, bismuth, and pepsin, or, more often, with a tablet of the combined sulphocarbolates of zinc, sodium, and calcium (the so-called intestinal antiseptic tablet), crushed for the small and difficult patients and administered in hot water or milk.

"The pharynx may require to be mopped or sprayed with liquor antisepticus, 1 part to 3 or 4 of water. The heart and lungs should be examined daily. Some patients will require stimulant treatment with strychnine, sparteine sulphate, digitalis, wine, brandy or ammonium carbonate, and frequently administered liquid foods, including beef extract or, occasionally, some other meat-juice. Complications on the part of the larynx or trachea will be met with steam inhalations, and those of the bronchi according to the state of dryness, râles or cough present; likewise of the kidneys, according to the pathological condition."

During convalescence, the author recommends the administration of a general tonic.

The general management of the case is to be in accordance with that of infectious diseases. The patient should be isolated, the physician, nurse, and other attendants should wear gowns in the sick-room and should be careful to protect their clothing, in order to prevent carrying the infection. At the termination of the attack, the patient is to receive an antiseptic bath, after which he is to be dressed in clean clothing, while all his

personal apparel worn during the attack, as well as the bed-linen and everything else that was used in the sick-room, must be disinfected.

#### EFFECT OF HYPOCHLORITES AND CHLORAMINES UPON THE BLOOD

In view of the intense interest shown in the antiseptic action of the hypochlorites and chloramines, the contribution by Milroy (*Biochem. Jour.*, Oct., 1916, p. 453) will be read with interest by students of this subject. Milroy has been studying the reaction of these two classes of antiseptic agents with the proteins, or, to be more specific, with the albumins and amino acids. He has studied eosol, magnesium hypochlorite (this with particular care), and paratoluenesodium-sulphochloramide (known in this country as chlorazene).

Without going into minute details, we may say that Milroy has arrived at the conclusion that the hypochlorite-solutions exert their antiseptic action more quickly than do the chloramine-solutions. The chloramine-solutions, on the other hand, present a decided advantage in the treatment of infected wounds when it is desired to maintain, in the presence of albumin, the available chlorine concentration at a moderately high level. Thus, in cases where fairly long intervals elapse between the dressing of wounds, the slower rate of change in the solution as compared with the hypochlorites is likely to prove of advantage. The hypochlorites, it is true, break down necrosed material very readily, and this is an advantage when time is a factor in primary disinfection of septic wounds.

Milroy does not discuss in great detail the relative advantages and disadvantages of the two classes of preparations, but Dakin, in his paper published in *The British Medical Journal* of January 29, 1916, has pointed out very clearly that the chloramine is much less toxic and decidedly less irritant, and at the same time is a stable preparation (that is, it will not deteriorate, either in powder or solution), which the hypochlorites are not.

In one interesting section of this paper, Milroy discusses the action of the hypochlorites and of chloramine when injected into the veins. By these experiments, all the hypochlorites are shown to be very decidedly hemolytic, even in such weak solution as 1 : 20,000; that is to say, they cause destruction of the red blood-cells. Chloramine (chlorazene), on the contrary, is prac-

tically nonhemolytic, producing absolutely no hemolysis in solutions of 1 : 10,000 or even of 1 : 7000, and only slight hemolysis in solutions of a concentration of 1 : 2500. The chloramine does, however, produce a fall of blood pressure when the solution introduced into the blood is raised to 1 part in 1250. Accordingly, Milroy thinks that it should not be injected into the blood in concentrations greater than 0.2 percent, and the chloramine concentration in the blood ought not be raised above 1 : 2000.

Milroy questions the germicidal value of either the hypochlorites or the chloramines when introduced intravenously, unless a blood concentration too great to be safe is employed. However, he believes that such intravenous injections may prove of value, in general septic conditions, in some other way than simply by rendering the blood germicidal.

On the whole, Milroy's conclusions are very favorable both to the hypochlorites and to chloramine. It seems that each class has its advantages, the greatest point in favor of the hypochlorite being its ability to break down necrotic tissue more rapidly, while in other respects the chloramine (chlorazene) is superior.

#### AMMONIUM SALICYLATE AS A PROPHYLACTIC AGAINST INFANTILE PARALYSIS

The simplest and probably the most effective remedy for the prevention of infantile paralysis, and for its treatment during the early stage, is ammonium salicylate. This is the opinion of Beverley Robinson, of New York, as expressed by him in *The New York Medical Journal* for September 30 (p. 628); who, however, supplements this course by introducing carbolated petrolatum into the nares night and morning.

While immune blood-serum, injected into the spinal canal, undoubtedly has been of great service, Doctor Robinson warns that it should be administered only by an expert and after very careful examination of the blood donor by a physician of wide experience. Otherwise, much harm may result. Obviously, therefore, the serum-treatment can not properly be employed in rural communities, or even by the profession at large. On the other hand, the ammonium-salicylate treatment can be employed by any competent physician. Doctor Robinson has great confidence in this remedy, which, moreover, he has found more valuable than any other remedy in the treatment of grip. He pleads for its wider use, if

another epidemic of infantile paralysis should occur.

#### AN EDITORIAL UPON ATROPINE

The following editorial upon atropine, which appeared in the September number of *The Medical World* (page 321) is so much to the point, and so helpful, that we have taken the liberty of reproducing it without curtailment in *CLINICAL MEDICINE*:

"Atropine is one of the most remarkable medicines in the materia medica. Every man who has studied it ends by making it little short of a panacea for the relief of pain. Its power of increasing capillary attraction, and dilating the capillaries of the skin especially, renders it *par excellence* the remedy for every known form of hemorrhage, active or passive, acute, subacute, chronic, traumatic and otherwise, hemorrhage from the nose, from the stomach, from the lungs, from the bowels, from the kidneys, purpura hemorrhagica, and all other forms of capillary bleeding. All of these give way to atropine, for the simple reason that if the blood is powerfully attracted into the capillaries, it can't be there and flowing out of a broken vessel elsewhere at the same time.

"All exceptions which have been reported to me are in the case of hemorrhages so severe and sudden that death has occurred before atropine has had time to act. One or two cases of this sort have occurred where a large pulmonary artery was eroded, in the rapidly spreading ulceration of the later stages of tuberculosis; also a few cases of sudden and fatal hemorrhage from the spread of intestinal ulceration in typhoid fever. This accident might be impossible if the sulphocarbolates are used from the beginning, or even if George B. Wood's remedy, oil of turpentine, is employed according to his directions at the time which he specifies; that is, late in the disease when the symptoms of ulceration become prominent. All other cases of hemorrhage of every description have been remedied by a full dose of atropine, enough to dilate the cutaneous capillaries and thereby flush the face. Try it, please, and especially let us know if any of you should have a failure. It is our failures from which we learn, and we are more desirous of establishing the truth of the matter than of establishing the use of the remedy.

"Other applications may be made of this power of dilating the capillaries—such as stopping the convulsions of epilepsy in the first stage, and relieving the nerve centers of

the intense hyperemia of the onset of hyperacute infectious fevers. We have applied atropine in full doses in the eruptive fevers when the patient was overwhelmed with the toxins at the start and the eruption failed to come out. Before we learned to use this remedy our patients usually died. Fainting, chills, the cutaneous contraction due to exposure to cold, neuralgias with contracted peripheral vessels, are other conditions where this principle may be applied.

"The second principle in applying atropine is its power of dissipating spasm. Pertussis, chordee, asthma, there is scarcely a spasmodic malady in the category which does not acknowledge the domination of atropine, although it sometimes fails. It succeeds when vagus irritation is the cause of asthmatic attacks by restraining this nerve. So many forms of pain are really spasmodic in their nature that one is tempted to term this alkaloid the king of pain, dethroning the less effective morphine. Atropine does not lock up toxins in the system, or establish a drug habit; its effects are powerful and lasting. Colics give way to its influence, and the spasm of the circular fibers of the bowel, that is present as a factor in many forms of obstruction, relaxes—so that many a clinician looks first to atropine in his cases of strangulated hernia, and only resorts to the knife when the lesion is not alone spasmodic. Many hernias can be reduced after a hypodermic of 1-50 grain of atropine sulphate.

"The choleraic symptom-complex, in cholera asiatica, infantum or nostras, denotes an intense irritation of the gastrointestinal terminations of the vagus, and atropine is exactly the antagonist of such irritability—a full dose ends the cholera and leaves us free to combat the causes. Many a life is lost for want of this sure and safe remedy.

"In treating habitual constipation atropine is applied wrongly in most instances. Very small doses relax spasm of the circular muscular fibers and paralyze inhibition; somewhat larger doses act also on the expulsive longitudinal fibers and hinder expulsive action. With one exception every combination we have seen in the manufacturers' lists has too much atropine. Ringer rightly appreciated this fact and asserted that drop doses of laudanum exerted a closely similar action to the true beneficial one of atropine.

"As a rule, atropine should be given alone. Many of the applications of atropine and morphine would be improved by leaving out the latter—the big bully that does little work and gets most of the credit. But the

action of atropine is quickened by the addition of nitroglycerin, and deepened and prolonged by that of strychnine—both in very small doses."

#### CALOMEL-POISONING

While in temperate climates doses of more than 1 or 2 grains of calomel are considered large and most physicians prefer to administer it in small doses (of 1-10 grain) at frequent intervals, the amounts prescribed in hot climates are much larger and as much as 10 or even 20 grains often is given for the purpose of affecting the flow of bile, inasmuch as the hepatic gland is considered to be made torpid by heat. (Hare.) The present writer has been told by southern physicians that far larger doses than those mentioned by Hare are prescribed, while equally large doses are dispensed over the counter without prescription.

Although calomel is thus used freely, and very often not under the direction of a physician, instances of poisoning are infrequent, the "Index Medicus" listing only one reference for the literature covering the years 1911 to 1915 inclusive. This single case was reported by Bufford and Lane in *The Journal of the American Medical Association* for July 10, 1915, and was that of a young woman who had taken a total of 56 grains of calomel in the course of five days. Throat and mouth were swollen, swallowing was painful, and gums were red and showed blotchy white spots. The cheeks and the folds between the cheeks and gums were slightly red and also showed white patches. There was considerable salivation, but no mercurial odor. Although the condition suggested mercurial poisoning, the use of mercurials could not be established at first, until at last it was disclosed that calomel-tablets had been taken as a laxative. In this instance, recovery followed appropriate treatment.

In *The Medical Fortnightly* for August, Dr. J. A. Hartman reports the case of a young colored man, who took 5-cents' worth of calomel powder as a purgative. Immediately after taking this dose, he began to feel a burning sensation in his stomach, to which were added intense nausea and vomiting. He was taken to a dispensary and his stomach pumped out, this afterward being repeated at the hospital. Despite energetic and persistent treatment, the patient died about twenty-six hours after taking the calomel. At the necropsy, the stomach was found to

contain 3 ounces of a yellowish-green liquid emitting a metallic odor. The mucous membrane was thrown into numerous thick folds and exhibited an olive-green color. Between the folds, capillary hemorrhages were found. The wall of the stomach was nearly three-quarters of an inch in thickness.

The amount of calomel taken by this man was estimated to have been about 60 grains, as the druggist who sold the powder said that they gave that much calomel in bulk for 5 cents. The question naturally arises whether corrosive sublimate had been dispensed by mistake instead of calomel, but the history of the case makes it plain that it was calomel that was taken. It also suggests that, while ordinarily 60 grains is not a lethal dose, perhaps much less than that amount may be liable to cause serious symptoms and even death. In fact, Witthouse and Becker ("Medical Jurisprudence, Forensic Medicine, and Toxicology") cite the case of a boy fourteen years old who died in three weeks from the secondary effects of 6 grains of calomel. In a case reported by Graves and Stokes, a girl of eleven years died eight days after having taken 8 grains of calomel, intense sloughing of the mouth and palate having occurred. In Sobernheim's case, an adult died in eight days following a dose of about 15 grains, an intensive sloughing of the face having been produced.

In all these cases of poisoning, it must, however, be taken into consideration that calomel is decomposed slowly, under the influence of sunlight, into mercuric chloride and mercury, and that a similar decomposition takes place more rapidly in the presence of table-salt and of other alkali chlorides. Hence, it is possible for calomel which has been kept in colorless bottles and exposed to light for some time to be contaminated with a certain proportion of mercuric chloride, and this may be the real cause of the serious and even fatal symptoms of poisoning recorded, especially if the dose is large and if it is not followed by an active purge.

Although poisoning by calomel fortunately is an infrequent occurrence, the possibility of it must not be lost sight of. Furthermore, it is particularly necessary to remember the action of light upon calomel and the fact that bulk calomel powder is liable to contain corrosive sublimate.

As solanine has proved eminently successful in relieving the pangs of dysmenorrhea, it should prove especially useful for hysterio-epilepsy.—*Med. World.*

# Miscellaneous Articles

## The Vaccine Treatment of Whooping Cough

WHOOPING-COUGH this *bête noire* of our profession until a very few years ago, is caused by a specific bacterium, the Bordet-Gengou bacillus. Before the discovery of the specific etiologic agent, whooping-cough was one of the things which made a physician feel ashamed of himself. The very fact that about every drug in the Pharmacopeia had been tried in the treatment of this intractable malady was proof positive that we were helpless in the face of this scourge of childhood. But, with the discovery of the etiologic role of the Bordet-Gengou bacillus, there came the hope that bacterin-therapy might be of value in the treatment of this condition. And this hope has proven to be well founded.

Nearly five years ago, shortly after the bacterin prepared from the Bordet organism was put upon the market, I had occasion to try its effect in only a very few cases, but the results were encouraging. Then came an epidemic (a little over three years ago), and I had ample opportunity to give the bacterin a thorough test. I used this remedy, to the exclusion of all others, in, as I remember it, 36 cases. A report of these cases in detail will be found in *THE AMERICAN JOURNAL OF CLINICAL MEDICINE* for August, 1914; which paper had previously been read before the Sixth District (North Dakota) Medical Society, and had excited considerable discussion.

In the paper just referred to, after citing many case-reports, I concluded:

"1. In my own personal experience, in a limited number of cases (36), the results of vaccine-therapy in whooping-cough have been very satisfactory, indeed.

"2. In no case occurring in my own practice, has there been any unpleasant symptom resulting from the vaccine-treatment, nor can I learn of any such from a perusal of the literature.

"3. Experience seems to prove that the best results are attained where large doses (50 million to 200 million killed bacilli) of the vaccine are employed. The fear of a harmful negative phase, here as elsewhere in the field of bacterial therapy, apparently has been

greatly overdrawn. I have used only large doses and have never seen any harmful effect whatever. Where failures have been reported, invariably too small doses of the vaccine have been used.

"4. As a prophylactic, and in early uncomplicated cases of pertussis, the plain Bordet bacillus vaccine suffices. But in late cases or in cases complicated by bronchopneumonia, a mixed vaccine containing the pneumococcus, streptococcus, and micrococcus catarrhalis, in addition to the Bordet bacillus, is indicated.

"5. The Bordet bacillus vaccine is a dependable prophylactic, if used promptly after exposure or before exposure when an epidemic is known to exist. My own two children, aged 2 1-2 and 7 years respectively, have repeatedly been exposed to bad cases of whooping-cough during the past two months. After their first exposure, each was given 100 millions of the killed bacilli; this dose was doubled a week later, and again in two weeks. Neither child has since contracted the disease.

"6. I believe, from my experience, that the gluteal region is the most likely spot into which to inject this or any other kind of vaccine, in the case of children. There is here plenty of loose subcutaneous tissue into which the vaccine can easily be injected, without causing undue pain and inconvenience. A further advantage is that the child cannot see what you are about to do when it is turned face downward across its mother's lap.

"7. An honest trial will convince the most skeptical that in the vaccine-therapy of whooping-cough we at least have made a wonderful advance over the oldtime empirical remedies, so called."

Referring again to the epidemic mentioned in the above paper, I might say that *no death whatever* occurred among these 36 patients treated with bacterin-therapy, while among other cases in the *same neighborhood* and during the *same epidemic*, untreated or treated by physicians using remedies other than bacterin, 12 deaths occurred. Further-

more, several of the patients I treated had developed bronchopneumonia before the bacterin-treatment was instituted, yet, no deaths occurred in my series.

Since publishing the paper referred to, I have treated many other cases of pertussis, and all the victims have recovered perfectly. Recently I attended a very frail, delicate little boy of 3 years, in whom the disease was well developed before bacterin-treatment was resorted to. The child was just recovering from a siege of enterocolitis and, consequently, was in poor condition to weather the storm of whooping-cough. He could retain food only until a paroxysm of coughing ended in vomiting. The first dose of Bordet bacterin was followed, in about twenty-four hours, by noticeable improvement; the paroxysms became lighter and were farther apart. After about a week, the condition became worse, when a larger dose of the bacterin was administered. The result was as before, but, if anything, more marked. All told, three doses of the bacterin were administered. The paroxysms ceased, the boy became able to eat and to retain and digest food; and today he certainly acts and looks like a totally different child. And this was a highly unfavorable case in the beginning.

A discussion of the pneumonias, pulmonary tuberculosis, pleurisy, and empyema will necessitate the preparation of a separate paper.

W. C. WOLVERTON.

Linton, N. D.

[This is a small instalment of Doctor Wolverton's series of articles on Vaccine- and Serum-Therapy in Everyday Practice, the last part of which will be found on page 1010 of *CLINICAL MEDICINE* for 1916. We print it here because it is timely. These articles will be continued.—ED.]

#### CURRENT COMMENT BY A COUNTRY DOCTOR

"HAPPY NEW YEAR! HAPPY NEW YEAR TO YOU!" This stereotyped greeting has met us from magazine and newspaper-page, as well as from the circular-letter issued by the man who desires our next-year's trade, although really caring not how especially happy we may be, if only he gets that business. Also, these same words—"Happy New Year!" have been exchanged between loved ones at home and with those just casually met.

The salutation here offered will be a change, "different." While it is the wish of the subscriber that you be happier than ever before,

still, his desire is not that you be completely joyous.

Happiness may be considered as synonymous with contentment. Imagine contented protoplasm of silurian sea or satisfied anthropoid; where in this year of 1917 should we be—accepting the theory of progress from stardust and primal cause to Class-A "M. D."? Again, just consider recent man and ask yourself, where would he be had he dwelt in perfect happiness and content. Mr. Man would be without the resources of modern medicine. This man—this aggregation of mind-directed molecules—would just have to go it afoot or ride horseback on his mission, whether it were one of healing the sick or still going out to kill a few hundred of his fellow men, under justification of war-warrant.

Hence I wish no man complete happiness, although desiring that he have a greater measure, more appreciatively received, than ever before. The wish is not extended to the desire to have the physician relieved of the unhappiness following his failure to get the wished-for results regarding his patients, even though he made every effort and exhausted all means within reach. But, it has been this very regret and sorrow—unhappiness—brought on by these failures that resulted in every worthwhile therapeutic advance.

Thuswise there is extended a sincere wish for a happier new year—N. S., O. S., fiscal—to be the lot of each and every reader; and may each of us be able to turn the unhappiness, that may come to us, toward eternal progress, the meaning of which to man on his journey is much more than utterly undesirable complete happiness and concomitant contentment. Convinced of being an immortal soul, therefore incapable of receiving lasting injury or backset, this writer feels that his measure of happiness in this new year, of limited grace, of 1917, and of the creation of the world ???, depends very largely upon himself.

*Economics.*—Both conservatives and radicals are at last rapidly awakening to the necessity of doing something to solve the serious economic problems facing the medical profession. It is true that, as a profession, we are more altruistic than any other class of men and women—bar none. But the day of forced charity—forced upon the recipient as a degrading necessity, and upon the donor through custom—must give way to an orderly and scientific system of giving medical services to every sufferer, and, in its prophylactic phase, to all society. In the

days of the isolated community and hand production, it was all very well for the community-physician to assume the major burden of this philanthropic work. Like the itinerant preacher—so well described by Corra Harris—he toiled night and day for mighty poor pay, supposedly largely sustained by the spirit of ethics and the knowledge of work faithfully done, yes, usually well done. Sister Corra gives some thought quite applicable to the hard-working country doctor and to the élite of the same profession. Members of the upper stratum of the profession of which she treats seem to have gotten along a bit better in the loaves and fishes department than the rank and file, although the latter are conceded to have done most of the devil-fighting on routine lines, often conducting belligerent activities in four-year-old storm-faded overcoats.

The Commission on Industrial Relations shows plainly that two-thirds of the American workers, urban and rural, are not making an excess over the existing point of comfort, a third of them even less than that. This means that, when these persons or their families are sick or employment ceases, they simply are "up against it." Dependence on private charity or eleemosynary institutions becomes a necessity to all, except those having more or less inadequate lodge insurance of some kind. Having any appreciable amount laid up for the chance accident or illness is out of the question.

Workmen's sick- and accident-insurance by legal enactment even now is here in limited form in certain states, and the writer believes that universal state-insurance will be a reality ere long. Dr. Otto V. Huffman, secretary of the Federation of State Licensing Boards and of the faculty of Long Island Hospital College, declares, in a letter recently to hand, that he is convinced of this and that it is essential that the physicians bestir themselves, or they will get it in a form not acceptable. The writer fully agrees with Doctor Huffman in this.

It seems that the time is here when it is well to stop listening to oratorical back-patting, in the form of able addresses of welcome at public functions, reminding us that we are members of the very noblest profession that ornaments now or ever has ornamented the earth; so loved of God that all of us should be surnamed "Theodore" and the women called "Dorothea"—and get right down to a realization of affairs as they actually are. Medicine of today is a highly developed and rapidly progressing science.

An ever increasing equipment both of knowledge and of material means is required. Also, no man in any calling can reach his highest efficiency unless he has ample time for recreation and is mentally free from the horror of economic stress.

We have been devoting ourselves to raising educational requirements (a most commendable thing) and reducing the output of young doctors, but, still, there are too many of them, under the present system of distribution and remuneration, to live properly and serve the public at their highest attainable point of usefulness. At the same time, single-thoughted cults, with and without adjuvant medical virtue and ranging from prayer to pressure, are multiplying; also, hosts of people are in need of proper medical attention of which they can not afford to avail themselves.

Reverting to the new year—would it not be well for every physician to devote at this time a little concentrated thought to the manifold problems of medical economics, to the end that they may be solved? That word "efficiency" rolls from tongue and flows from pen and is fingered on all the keyboards; but, alas, instead of having the organized efficiency of other professions, trades, and modern successful business organizations, we doctors are sadly neglecting the business end of our professional lives. We are in competition with each other, a competition most commendable in so far as it aims to arrive at higher excellence, but woful when it becomes an ethic ignoring (usually forced), a rivalry for the almighty dollar. Our friends the druggists do not hesitate to get together and run right up to the legislature to ask for what they want, even to the point of the limitation of the doctor's prerogatives in handling drugs. This being largely a proposition of economic determinism on the druggist's part, no word of disparagement is implied. But, why do we, the doctors, stand still and let them get "the edge over us." They are just fighting the battle of competitive existence with enough sense to get together as a group.

It is up to the physicians to do the same as the druggists do, or else have their rights trod upon. The legal fraternity quarrels a bit, but see how quickly they get together when their group interests are threatened. No wonder that when physicians do have a little money they make a good market for mine- and oil-stocks—as a class, they are easy.

*As to Individuals Economic Errors.*—While dwelling upon the necessity of organized

economic effort, it is not well to forget that the individual can help himself to some extent. Too many ignore the opportunities presenting themselves or are slack in taking advantage of them. For one thing, physicians may be found who are hasty in diagnostic matters. Instead of taking every case as a potential possibility for professional as well as material advancement, they tell the patient to stick out his tongue, give him something or other, and let him go, when a careful examination and a test of the urine might have resulted in a little money and avoidance of becoming the mere direct or indirect advance-agent of a competitor or a specialist at a distant point.

Carelessness in sending bills or otherwise keeping up with collection is another expensive error. Any practitioner should know that patients and friendships often are lost by neglecting to make timely collects, and not by pushing collections in a reasonable manner. But if, like Buster Brown, we are going to resolve, there could be named a whole string of resolutions along these lines that it would be well to make, provided they are to be kept.

*The Phosphotungstates.*—The article by Nielson, in November CLINICAL MEDICINE, on the phosphotungstates should prove of intense interest to every clinician devoted to the perfection of the science of drug administration.

Two troublesome factors are present in the administration by mouth of many of our valuable medicinal agents. If, as seems probable, early laboratory-research is born out and the mineral tungstates, that are formed by the release of the alkaloid, do not prove therapeutically objectionable, then a distinct advance must be recorded—something similar in action, but much broader in practical application than Lloyd's reagent. The long intestinal tract, rather than the short and irritable stomach, with its acid reaction, is usually the proper place for the absorption of drugs taken internally. The passing of the drug through the stomach unchanged by acid reaction many times is greatly to be desired. Our eyes are fixed upon the alkaloidal phosphotungstates.

*Tapeworms and Evolution.*—And now it has been advanced as an argument against the advocates of a vegetarian diet that we are descendants from a race of original meat-eaters. It is argued that the fact of the three commoner exclusively man-infesting tapeworms, which required extended time to become humanly habitated, shows early

man to have been a flesheater. It did take a mighty long time, of course, for those "critters" to adjust themselves to a satisfied lonely and sexually paradoxical life in return for an ideal and predigested nutrient pabulum. This, however, takes neither man nor tapeworm back far enough if the dietetic question is to be settled upon evolutionary lines. One writer takes it that what early man or anthropoid ate has little to do with the proper nourishment for descendants riding in a Ford. The question is, how best to feed the human economy in their present stage of development. We eat by far too much flesh; but, whether or not we should align with the herbivora can hardly be settled by disturbing the satisfied and quiet *T. solium*, *T. saginata* or, yet, the morphologically allied *B. latus* and bringing them into the argument, in order to determine the diet of arboreal ancestors. Perhaps early man was lead into animal food through robbing bird's nests. The fact that the young of modern man is addicted to the same thing should be excellent proof. Is not the story of human evolution completely told in pre- and postnatal development of the young?

If we study out this mixed evolution of man and worm, we must have an explanation of how soon man learned to catch fish, *Bothriocephalus latus*, before settling down for a permanent quiet and sexually anomalous existence, terminated by the death of his host or the ingestion of a dose of aspidium filixmas, presumably underwent part of his cycle of existence piscatorially entertained. Shall we take this as still further proof that life had a marine origin? Maybe it would be better to work the proposition out on calories and availability.

*Asymmetry.*—When reducing fractures and making diagnoses of limb injury, comparison with the opposite side is of immense value; but, also, it may be most deceptive. Called to see a large-framed negro injured while employed on a snagboat, he was found by the writer to have an injured hip. The leg was held in classic partial flexion, with the foot emphasizing the inward rotation. The muscles were tense, and, as is common in his race, the negro exaggerated the pain symptoms and referred them anatomically indiscriminately. A hypodermic injection of H-M-C was given, and ether made use of for complete relaxation. Swelling and muscular development rendered diagnosis difficult, but the trochanters seemed to give proper relation with the Roser-Nelaton line and areas of motion were nearly normal. Still, there was evidence of dislocation of the femoral head,

on account of the adduction and inward rotation of the foot.

All the typical forms of dislocation were reviewed and every detail of the articulation and surrounding structures was visualized, as doubt still lingered. Again the question was asked of the bystanders: "Is there anything peculiar about this man's legs or feet; is he 'pigeon-toed.'" Again a negative answer. Fortunately the master of the boat suggested that the man's brother be sent for, who was working a little distance upriver; for, there, sure, must exist some anomaly. So operations were suspended until the brother's arrival. And this was Sambo's grinning reply: "Yassah, doctah, he shoah am one pigeontoed niggah on one side."

Continued applications of hot magnesium-sulphate solution were prescribed and recovery followed in due time. However, the suggestion made by a riverman, that strangers working where they are liable to injury would do well to have tattooed conspicuously upon them a note of warning to suddenly summoned doctors, should they in any manner be abnormal, struck the writer as being not without value. How much trouble would there not have been saved had this darkey been duly ornamented with such a red-ink sign of caution.

*The Southern Medical Association.*—The annual meeting, in November last, of this Association marks advance in medical conventions. The clinical features were brought forward prominently, the selection of Atlanta for the place of meeting rendering this eminently practicable. Gatherings of this kind are, by necessity, of short duration and it is well that only matters useful to all be brought forward within the limited time, both in clinical questions and in subjects of general interest to the profession represented. Matters supertechnical we may all absorb to the extent desired through reading current literature and new books.

The Southern Medical Association and its journal are a credit to the medical profession of the South, and we hope ere long to number among the membership every qualified physician in this section. And why not? The reelection of Dr. Seal Harris, of Birmingham, as secretary-treasurer and editor of the *Journal* was a most wise one. Attendance was not the writer's privilege; while arrangements to go had been made, the exigencies of a country practice prevented this at the last moment. More complete organization and a little better arrangement between physicians themselves would enable fuller attendance at

medical-society meetings, and it is to be hoped that eventual fuller cooperation will arrange this, each man or set of men taking turns, the one temporarily attending to the practice of the other. Unfortunately, at present no special effort is made in very many locations to be present even at county-society meetings. Until there is reform in this, representation at general meetings at a greater distance will not reach the figures that it should.

*Chlorazene.*—This new chlorine-carrying synthetic seems to be winning a place for itself very rapidly. Since his mention of the preparation in a former article, the writer has been according it even more general application, failure to secure an imported synthetic that for many years has been a favorite and seemingly almost indispensable, probably being responsible for this more extended use of the newer antiseptic.

Especially good results have been obtained by using a 1-percent aqueous solution, injected under the foreskin, in chancroids, with paraphymosis. A series of several such subjects came for treatment from a distant camp of laborers. The patients were furnished ordinary urethral syringes and instructed to wash out the prepuce thoroughly with warm water every three hours, then to follow with the chlorazene solution in the same manner and gently massage the swollen prepuce. Results in these cases—three with no initial cauterization, on account of the swollen condition—were most excellent. Doubtless others have made more extensive use of chlorazene in this manner and their reports will be of interest. It has also given the writer good results in aphthæ, while in the general surgical work it has been accepted as a routine part of antiseptic treatment. Doubtless all have read that this preparation has been approved by the Council on Pharmacy and Chemistry.

*Posture in Obstetrics.*—Markoe, in *The Journal A. M. A.*, well brings out the fact of the sitting-posture often being of marked service in aiding labor by reason of its bringing the entire weight of the uterine contents to operate on the dilating os. He refers to the literature on this subject and reminds us that the obstetric chair is of great antiquity, of general oriental use and that primitive peoples have improvised such apparatus. In several African villages, a block of wood beside a tree, with forked stakes driven in the ground, to serve as stirrups and hand-holds, have been found.

Undoubtedly walking about or sitting up, either erect or in an inclined position, is not

insisted upon often enough during the early stages of childbirth; still, these measures often will hasten dilatation, and overcome inertia, as well. Too frequently the woman is allowed to go to bed and stay there at the appearance of the first stage of her labor. The practice of having a rocking-chair beside the bed and allowing change back and forth in many instances is a most commendable one. If this be done between pains, the amniotic fluid exerts a not inconsiderable hydrostatic pressure, while much rest is afforded by change of posture, in a tedious first stage.

A. L. NOURSE.

Sawyer ville, Ala.

#### MISSIONARY PHYSICIAN WANTED IN INDIA

The Salvation Army is anxious to secure the services of some competent physician, one who is in sympathy with its religious work, to serve as a medical missionary in India. The salary paid will not be large, but there will be opportunity to do splendid service for the needy sick in that far-away land. A three-year agreement will be made with the physician selected, who will be given a small monthly salary and his passage paid to India.

Anyone interested should address Commissioner Thomas Estill, Salvation Army Headquarters, Chicago.

#### THE PASSING OF THE "LANCET-CLINIC"

We are very sorry to read, in a recent number of *The Lancet-Clinic* (Cincinnati), the announcement that with the close of the year it will cease to exist. This journal is one of the oldest in the Mississippi Valley and it is the only weekly at the present time published west of the Alleghenies, with the exception of *The Journal of the American Medical Association*. For that reason it is all the more a source of sincere regret that it has been found necessary to suspend its publication.

The management of *The Lancet-Clinic* was reorganized some months ago, the ownership passing into the hands of the medical profession of Cincinnati. At that time, its policies were changed, with the result that its sources of revenue were cut down. The following statement is given out by one of the directors of the organization:

"When we adopted the ruling of the Council on Pharmacy of the American Medical Association, our income from advertising was

reduced more than one-half. A careful estimate of the cost of printing and editing *The Lancet-Clinic* and the income from subscriptions and advertising shows we are now losing at the rate of about \$2500 a year."

We repeat, that we are sorry to see *The Lancet-Clinic* pass away.

#### LOBELINE SULPHATE IN STRANGULATED HERNIA

I had just taken up my pen to write about a case of strangulated hernia in which I gave lobeline sulphate as the last thing in an attempt at reduction; but, before having finished the title, the November issue of *CLINICAL MEDICINE* came to hand, and, of course, I at once settled down to scan its contents. To my great surprise, while reading the very first article, I saw that lobeline—the very remedy I meant to brag about—had been recommended by Ruatta for this same trouble. I, sure, felt disappointed! I thought I had made a great discovery; but, as ancient Ben Akiba was wont to say, "There is nothing new under the sun." Still, I am going to report upon my own experience in this direction, as it may be a help to some brother who, like myself, did not know of the value of lobeline in this trying condition.

The patient was a farmer's son eight years of age who had had a right-side scrotal hernia since he was two years old. He had never worn a truss, except such a contrivance as his mother had made him from a pair of suspenders. About one year ago, this hernia became strangulated for a short time, but was reduced by a physician.

On this occasion, the boy began to complain of pain at about 6 p. m. and soon after began to vomit. The mother gave him pain-relieving remedies, thinking the child had colic. The father coming home soon after the boy began to complain examined the hernia and found it down and very hard. He placed the boy's hips on pillows, with head low, and began trying to reduce it, which he had been able to do on two occasions before, but failed on this occasion. The patient grew rapidly worse, suffering terrible paroxysms of pain and vomiting frequently.

I was called, and arrived at the bedside at 9 o'clock that evening. All the symptoms of a strangulated hernia were present and the tumor itself was so sore that it was impossible to attempt reduction. Therefore, I gave the patient a hypodermic injection of 1-6 grain of morphine, and 1-120 grain of atropine. The tumor was exceedingly tense and a portion of

the neck, that of the ring, was the hardest that I ever saw. My judgment at the time told me that it was irreducible by taxis. The family was poor and they could not make up their minds to send the boy to the hospital. So, after the hypodermic had taken effect and the patient felt easier, I decided to try.

A broad board was secured, one end placed on the floor, the other resting upon the bed. A comforter was folded and put in place with a pillow, for the hips. On this, the patient was placed, and for fifteen minutes I tried my best to reduce the rupture by taxis, but failed absolutely. Then the patient was put to bed, with hips elevated, and a water-bag was placed so as to keep up a continuous pressure upon the tumor. Efforts were made to get the bowels to move, but failed. After another rest, the patient was given an anesthetic, placed in a favorable position and an effort at reduction again was made; but only failure followed. Morning found the patient vomiting from time to time, very restless, and with pinched, anxious expression of face.

Not knowing what else to do, but recalling the great relaxing effect of lobelia and its stimulating action on the secretions, I decided to make one more effort. Consequently, I gave 1-50 grain of lobeline sulphate, hypodermically.

In ten minutes, the boy stopped his tossing about and lay perfectly quiet, breathing regularly, and soon was in a nice state of perspiration. After letting him rest quietly for perhaps an hour, I made another examination of the tumor, when, to my great surprise, the indurated neck had become soft and the elastic resiliency of the whole tumor had changed. Once more I repeated my efforts at reduction, and in a few minutes the gut returned to the abdominal cavity, and there came relief from all symptoms.

The effect and results of lobeline in this case were so pronounced that too much can hardly be said in its favor.

My successful use of lobeline in asthma, bronchitis, eclampsia, and especially in spasmodic croup led me to prescribe it in this instance, and I cannot think that the good results that followed were not due to the effect of this alkaloid. It was the most beautiful exhibition of drug-therapy I have ever seen.

Lobeline is one of the most useful antispasmodics mentioned in my *Materia Medica*. This is especially true when the patient presents an increased vascular tension. It acts well in epilepsy, in chorea, also in hysterical convulsions, but must be administered

in small doses, often repeated, until its physiological action begins to manifest itself, then often enough to maintain it. It is a remedy of great value in relaxing the system in the passage of gallstone or renal colic. Also, in puerperal eclampsia, either alone or combined with veratrine. In the troublesome cough of acute laryngitis or that of tuberculous laryngitis I have prescribed it with marked success.

It is claimed that a full dose given hypodermically will sometimes cause the reduction of an obstruction in the bowels after all other measures have failed; however, I never have had an opportunity to try it in that condition. In constipation, when the feces are dry and hardened in the colon, its addition to the many formulas now on the market will prove a marked improvement, because of its power to excite the secretions.

For the wild, irregular pains incident upon a rigid os uteri, I know of no remedy so valuable as lobeloid and caulophylloid combined, given in small doses, but often repeated, until the desired result is obtained. This same combination also does good work in pain produced by congestion of the pelvic viscera in women.

The oftener I prescribe lobelia, the better I am pleased with its action.

*But*, it is a drug that must be prescribed with care.

C. W. CANAN.

Orkney Springs, Va.

If Doctor Canan's patient had lived in a great city where surgical skill of a high order is constantly available, this boy would have landed on the operating table within a very few hours—and properly so. The doctor's lack of hospital facilities has given the readers of this journal the record of a most interesting clinico-therapeutic experiment.

Lobeline is undoubtedly one of the most promising antispasmodics at our command, and it is one with which most physicians are little acquainted. Veterinarians, however, are using it constantly, and with brilliant success. We understand that a hypodermic tablet containing lobeline, arecoline, and strychnine is being largely employed in equine colic. Professor Quitman, of Chicago, has recently written an article upon this topic, praising this combination highly. Veterinarians also use lobeline alone to allay the excitement of azoturia, to relieve the symptoms of tetanus, and in other conditions requiring powerful antispasmodic and sedative

action. In therapeutics, the veterinarians are really doing things.

We hope many readers of *CLINICAL MEDICINE* will follow up the suggestion contained in this article. Hypodermic tablets of loline sulphate (1-200 grain each) are now on the market.—Ed.

#### WHY THE UNTRAINED CANNOT DIAGNOSE A DISEASE

To diagnose, means, to know the difference between things, to recognize fine distinctions between things seemingly alike. Any person's ability to diagnose, therefore, is in exact proportion to the extent and breadth of his experience, knowledge, learning, training, judgment, and power of observation. The man who has studied, traveled, experimented, and worked with the largest number of facts, the man whose accurately stored-up experiences are most profuse is more likely to distinguish precise differences between facts apparently the same than is the superficial, only partly educated individual or the homebody whose standards are limited to his own family and restricted life.

It must be clear, then, that the judgment and diagnosis arrived at by a man like Mr. Rockefeller is infinitely superior to that of a housewife, whatever her wifely qualities. It must be equally evident that the diagnosis of a disease given utterance by Dr. Lewellys F. Barker, professor of clinical medicine at Johns Hopkins University, is unquestionably more reliable than the diagnosis made by the best allopath, homeopath, osteopath, or religious healer.

Why? Because the experience, the devotion to study and experiment, as well as the permanent facts discovered by Doctor Barker in his laboratory-researches and bedside-observations prove that he notes essential contradictions, where the ordinary man sees similarities.

Since treatment ought to fit a diagnosis as a key fits a lock, the failure of the patent medicine, the home treatment, "systems of medicine" founded on a preconceived state of mind, and religious healing lies not in the lack of results—for ninety-odd ill states of health heal and disappear spontaneously in spite of illogical remedies and absence of a diagnosis—but in the lack of a correct diagnosis of the five or six seriously sick people in the hundred, whose ailments, to the uninitiated, resemble each other enough to look alike.

The ability to make a diagnosis rests upon years and years of education and practical experience. A well-traveled and university-trained youth of twenty is 95 percent wrong. At twenty-five, he is 90 percent wrong; at thirty, he improves 5 percent; at thirty-five, a man is 80 percent mistaken; at forty, he is 75 percent wrong; at forty-five, he is 70 percent in error—and this he commonly retains to the end of his days, because few persons improve beyond that age.

A small number continue to learn and profit by their experiences and studies, and a handful become philosophers. These are right six or seven times out of ten, at their best; for, the postmortem confirmation finds even the cooperative intellects of whole hospital-staffs from 51 to 60 percent off in the diagnosis of human disease.

If all this holds true for the broadest and best-trained men familiar with the employment of the many instruments of diagnosis, which the ordinary doctor, osteopath, healer or granny is unable to apply, then the mistakes in treatment made by them must be many.

The mere fact that they "get results" is analogous to giving a defaulting bank-teller, when he is also a Sunday-school superintendent, a good character. Doctor Jekyll is present in Mr. Hyde, and thousands will testify to his good character. When a mail-clerk recently was sent to Atlanta for systematically robbing the mails for eighteen years, the jury was amazed, and was almost influenced by the legion of substantial citizens who swore to his good character.

So it is with "results" obtained by doctors having big practices, with osteopathy, religious healing, home remedies, patent medicines. The witnesses did not see the mail-clerk steal, therefore, he is honest—to them. The "doctors" did not accept or realize their blame for five or six failures, when ninety-four "results" seemed to come from their treatment, despite an absent or incorrect diagnosis.

It is those five or six persons in the hundred sick and ailing ones that scientific physicians aim to save and to make happy—all the "character-witnesses" and "results" in the world will not restore sick people's health and usefulness, unless the treatment fits a correct diagnosis.

Diagnosis is not usually probable in intricate disorders, unless there is in charge a physician who has had better than a good education and experience. Not a partial, but a complete and an all-inclusive use of the assistance to be obtained by means of the

instruments of many sciences is needed. Neglect of that or of a complete physical examination of the patient or the submission, unconsciously, to the loosely used names applied by doctors and medical books as designations of diseases will reduce the chance of a correct diagnosis.

L. K. HIRSHBERG.

Baltimore, Md.

[We should be sorry to see in lay journals this or a similar arraignment by the author, whose articles often are syndicated and printed in popular publications; for the simple reason that we are convinced that he has overstated the truth. Truth is so impressive and convincing in its own merits, that it cannot serve a good purpose to paint it in lurid or in false colors; the very attempt will pervert truth, and the intended lesson is lost. The assertion that even the best-trained and most experienced men at forty-five years of age still are from seventy to thirty percent wrong in their conclusions and deductions can not, we believe, be supported by facts. It would be a sad testimony to our boasted advances in sciences, to our self-satisfied and complacent cocksureness if it could be asserted, justly, that a lifelong devotion to the search after truth could not arrive at better results.

Nor is it correct, we believe, that "the post-mortem confirmation finds even the cooperative intellects of whole hospital-staffs fifty-one to sixty percent off in the diagnosis of human disease." We are familiar with the spectacular, pretentiously self-abasing and pseudo-modest investigations and discussions that have given rise to this assertion. They are based upon results of hospital experiences in cases that are not of the ordinary and that cannot be made to illustrate the rule. Moreover, it can not be said that all adventitious irregularities found at autopsy necessarily stood in any relation at all to the affection responsible for a given death, either directly or indirectly. There may exist abnormal and unphysiological conditions, that are disclosed at autopsy, which did not interfere with the physiological processes during life.

We admit that diagnostic errors are of frequent occurrence, even at the hands of the best physicians and diagnosticians; but we refuse to admit the justice of making out things worse than they are. To say that better things are not possible, is, to deprive us of all incentive to do better work. To go aside from the truth or from the probability (in the impossibility of ascertaining the exact

truth) is, to lose the point of the moral, which is, that we should strive for truth and for perfection, veiled and apparently impossible of full attainment as they may be. Lessing once said that, if he had the choice between attaining the truth and searching devotedly and continuously after truth, he would choose the searching. But, there must ever be the hope that the truth may be discovered and attained, else the search is hopeless of itself, and is defeated by that very fact.—Ed.]

#### THE MISSISSIPPI VALLEY MEDICAL JOURNAL

*The Louisville Monthly Journal of Medicine and Surgery* has become the official organ of the Mississippi Valley Medical Association, and its name has been changed to *The Mississippi Valley Medical Journal*. Without doubt, the *Journal* will be of great service to the society, and we trust the society may also be of considerable financial and other benefit to the journal. Best luck to both.

#### A REMARKABLE SYMPOSIUM ABOUT THE DOCTOR

We have just learned that in the January number of *The Medical Review of Reviews* there is to appear a most remarkable symposium on the medical profession. That embarrassing question, "What's the matter with the doctor?" was proposed to such men of affairs, authors, poets, stage-folk, and other celebrities as Andrew Carnegie, John Wanamaker, William Dean Howells, Theodore Dreiser, Bliss Carmen, Wallace Irwin, Wilton Lackaye, Eugene Walter, Andrew D. White, David Starr Jordan and Hudson Maxim; besides a list of others equally as famous.

It certainly will be interesting to learn what these many minded and highbrow folk think about us. Are we good? Are we bad? Are we solving the world's problems? Are we talking drivel? Should we surrender the field to the Christian Scientists? And, then, what is to become of us? Doubtless we shall know all about it after we have read the symposium. We await that *Review* issue with mixed feelings of pleasure and misgiving.

#### WHEN STATE LEGISLATURES WILL BE IN SESSION

The following table shows the dates when the legislatures of the different states will begin their regular sessions this year. It is important that every physician should keep

this in mind, since more and more bills are being introduced affecting the interests of the physician. We hope that every reader of CLINICAL MEDICINE will make it his business to keep informed. This is safety.

|                     |                    |            |
|---------------------|--------------------|------------|
| Arizona.....        | Session opens..... | January 8  |
| Arkansas.....       | Session opens..... | January 8  |
| California.....     | Session opens..... | January 8  |
| Colorado.....       | Session opens..... | January 3  |
| Connecticut.....    | Session opens..... | January 3  |
| Delaware.....       | Session opens..... | January 2  |
| Florida.....        | Session opens..... | April 3    |
| Georgia.....        | Session opens..... | June 27    |
| Idaho.....          | Session opens..... | January 8  |
| Illinois.....       | Session opens..... | January 3  |
| Indiana.....        | Session opens..... | January 4  |
| Iowa.....           | Session opens..... | January 8  |
| Kansas.....         | Session opens..... | January 9  |
| Maine.....          | Session opens..... | January 3  |
| Massachusetts.....  | Session opens..... | January 3  |
| Michigan.....       | Session opens..... | January 3  |
| Minnesota.....      | Session opens..... | January 2  |
| Missouri.....       | Session opens..... | January 3  |
| Montana.....        | Session opens..... | January 1  |
| Nebraska.....       | Session opens..... | January 2  |
| Nevada.....         | Session opens..... | January 15 |
| New Hampshire.....  | Session opens..... | January 3  |
| New Jersey.....     | Session opens..... | January 9  |
| New Mexico.....     | Session opens..... | January 9  |
| New York.....       | Session opens..... | January 3  |
| North Carolina..... | Session opens..... | January 3  |
| North Dakota.....   | Session opens..... | January 2  |
| Ohio.....           | Session opens..... | January 1  |
| Oklahoma.....       | Session opens..... | January 2  |
| Oregon.....         | Session opens..... | January 8  |
| Pennsylvania.....   | Session opens..... | January 2  |
| Rhode Island.....   | Session opens..... | January 2  |
| South Carolina..... | Session opens..... | January 9  |
| South Dakota.....   | Session opens..... | January 2  |
| Tennessee.....      | Session opens..... | January 1  |
| Texas.....          | Session opens..... | January 9  |
| Utah.....           | Session opens..... | January 8  |
| Vermont.....        | Session opens..... | January 3  |
| Washington.....     | Session opens..... | January 8  |
| West Virginia.....  | Session opens..... | January 10 |
| Wisconsin.....      | Session opens..... | January 10 |
| Wyoming.....        | Session opens..... | January 9  |

#### EXIT—JOHN BARLEYCORN?

At the last general election, Demon Rum (alias, good John Barleycorn) received an awful drubbing, thanks to the rising storm of popular disapproval, aided and abetted by women's votes. This is what one Chicago newspaper poet has to say about the situation.

John Barleycorn, my Jo John, you've yet to taste defeat;  
A million strong and husky men have thought they had you beat.  
You've stood against the best o' them, you've watched 'em jab and swing  
A thousand years and maybe more, and still you're in the ring.  
While they are in the graveyards, John, in many a sodded row,  
And still they haven't got you licked, John Barleycorn, my Jo.

John Barleycorn, my Jo John; Sing Sing and Joliet  
Are crowded to the iron roofs with fighting men  
you've met.  
And men o' sense an' brains, John, in many a hard  
fought bout,  
Have done the best that men could do, but failed  
to put you out.  
You've seen 'em rise and fall, John, you've seen 'em  
come and go,  
And triumphed over all the lot, John Barleycorn,  
my Jo.

But times have changed a bit, John, they've got  
you going, lad.  
You're getting wabbly on your feet; you've not the  
punch you had.  
It looks to us outsiders, John, as if you'd had your  
fling,  
When four and twenty sovereign states have barred  
you from the ring.  
A wee bird seems to whisper, John, that you are  
going to blow  
Like all the other champs have done, John Barley-  
corn, my Jo!

#### HOW TO SELECT BACTERINS FOR NASAL, THROAT, AND BRON- CHIAL INFECTIONS

This article is written in self-defense. So many readers of CLINICAL MEDICINE have written to me for information that I hope the Editor will give it space, to save me the labor of individual correspondence.

In the use of bacterins, it is quite essential to use a mixed stock containing *every species* of the infecting organisms present in a given case. To determine what these are, it is seldom necessary to make cultures, provided one can command a good oil-immersion lens and the following stains: Aniline-oil (for making aniline-water); saturated alcoholic solution of gentian-violet; Gram's iodine-solution; saturated aqueous solution of Bismarck brown; 95-percent alcohol; Loeffler's alkaline methylene-blue.

**Test Solutions:** Aniline-water is made by shaking 1 mil (Cc.) of aniline-oil with 19 mils of water and filtering the resulting milky fluid. The filtrate should be perfectly clear. It is good for only a week. Gentian-violet aniline-water (the staining mixture ready for use) is made by mixing 1 mil of alcoholic solution of gentian-violet with 6.5 mils of aniline-water. It should be discarded after one day.

Gram's iodine-solution consists of iodine, 1 Gram; potassium iodide, 2 Grams; water, 300 mils.

**Preparation of Specimens:** Moisten the fingers and take up a little soap from a cake. Thoroughly soap both sides of the cover-glasses, then, rinse them well, and finally dry them on a clean soft cloth free from lint. Now have the patient blow from one nostril

at a time upon a piece of sterile gauze, then, with a sterile platinum loop, pick out any purulent particles and smear them as thinly as possible and let them dry in the air, or, if in a hurry, by holding the coverglass over the flame. Having thus made two smears of nasal secretion, proceed to make two from the throat-secretions and also two from the bronchial mucus, if that can be secured.

**Staining with Loeffler's Solution:** Grasp a smeared coverglass with forceps and pass three times through the flame to fix the smear. Cover with Loeffler's alkaline methylene-blue and heat to the steaming-point over the flame. Wash in water, then mount in water on a clean slide.

**Examination for *Pneumococcus* and *Friedländer Bacillus*:** The pneumococcus is a fairly large diplococcus, with a hyaline zone surrounding it when examined in a water mount. It consists of two somewhat arrow-head-shaped (lanceolate) cocci, with the points usually approximated, though sometimes the bases are together.

Friedländer's pneumobacillus is usually a long rod, with a distinct hyaline zone, showing in a water-mounted specimen. Sometimes it occurs in pairs and resembles the pneumococcus, though never lanceolated. It also forms chains of four or more elements.

Other bacteria also may be found in this blue-stained specimen. The influenza-bacillus is a very small short rod, so short that it often looks like a diplococcus, because the ends stain more deeply than does the middle portion. Often there are chains of streptococci, most frequently in throat- and lung-specimens. Many varieties of staphylococci also are found. Most of these are the micrococcus catarrhalis and the common pyogenic organisms, the staphylococcus aureus and albus.

If organisms resembling the influenza-bacillus are present, another specimen should be stained by Gram's method.

**Gram's Method of Staining:** Cover with gentian-violet aniline-water, then heat to the steaming-point. Wash in water. Cover with IKI solution (iodized potassium-iodide) for from thirty to sixty seconds. Wash in 95-percent alcohol until the washings are perfectly colorless. Counterstain with Bismarck brown for thirty to sixty seconds. Wash in water, then mount in water.

**Examination of the Gram-stained Specimen:** The pneumococcus appears blue-black and is surrounded by a hyaline zone. The lanceolate shape can be well made out. The influenza-bacillus is stained a faint brown, has

no hyaline zone, and is smaller than the pneumococcus. It generally appears like two round cocci, never lanceolate. Friedländer's bacillus is also Gram-negative and stains brown. Its large size and the presence of a hyaline zone are distinctive.

**Selecting the Bacterin:** Having examined all the smears (not forgetting to collect at least two dollars for the microscopic examination), note the various germs present, then consult the lists of the various makers for a mixed bacterin containing all the varieties found. For example, if Friedländer's bacillus is present, it would be useless to administer a bacterin that does not contain this organism. It does no harm to use a mixed stock that contains varieties not present; for, the makers have made up their mixtures as a result of exhaustive microscopic and cultural studies, and one might as well immunize at once for all the common varieties likely to be present.

**Dosage in Acute Cases:** When you are treating an acute cold, in which there are copious discharges, sneezing, febrile reaction, general malaise, muscular soreness, and so on, do not be afraid to give, for the initial dose, 0.5 to 1.0 mils (Cc.) of the bacterin. Usually the patient will get well almost over night if the dose was large enough to negate the disease-process. If all the symptoms do not disappear in two or three days, give a larger dose.

The local reaction seldom extends over an area larger than a silver dollar, unless the Friedländer bacillus is included in the mixture. Subsequent doses should not produce an area larger than this, and generally they will not if the increase is by from 0.3 to 0.5 mils (Cc.).

To secure complete immunization, push the dose up to 2 mils and repeat until no local reaction whatever follows it. The pneumococcus is generally the hardest to get rid of, and further microscopic examinations may reveal the fact that it persists after all the others have disappeared. In this case, doses of from 200 to 500 million plain pneumococci may have to be given.

**Dosage in Chronic Cases:** Here, smaller doses at somewhat longer intervals may be employed. For instance, start with 0.5 mils (Cc.) and increase by 0.25 mils at intervals of from five to seven days. The best interval for the individual case can be found only by close observation of the symptoms. In general, the succeeding doses should be timed to come from twenty-four to thirty-six hours before the positive phase (improvement of

symptoms and drying up of discharges) begins to recede too greatly.

The idea is, to reinforce the positive phase and push the "peak" higher with every dose. Too big a dose may be followed by a prolonged negative phase, but the positive will be correspondingly high. A great increase in the local reaction is a sign that the dose was larger than needed. Gradual, consistent increase is the ideal to aim for.

*Accessory Medical Treatment:* Nuclein should be administered in small repeated doses, to promote leukocytosis and increase the red corpuscles; but not continued too long. Any other suitable blood-building tonic can take its place after a month or six weeks. Malt and extract of codliver-oil is good. The diet should be digestible and nourishing. Any tendency to autotoxemia, as evidenced by high total acidity of the urine or by presence of indican, should be corrected by means of salithia, intestinal antiseptics, and sodoxylin.

Local treatment with warm alkaline antiseptics is most important. The antibodies do not have a chance to act unless an abundant supply of blood is carried to the diseased membranes. The Birmingham style nasal douche is effective; but I think most patients do best if instructed to use it—from 2 to 4 ounces for each nostril—only at bedtime. Such a treatment is worth a dozen halfhearted applications throughout the day. The throat also should be well gargled with the solution, used as hot as is comfortably borne. Infections of the bronchi are best reached with calcidin.

MALCOLM DEAN MILLER.

Wollaston, Mass.

#### EXPULSION OF STONE IN THE BLADDER

The brief description of the following case is interesting to me from the fact that the patient was relieved by the judicious administration of just two little tablets. It happened in the following wise:

On the 27th of May last, a man presented himself at my office for treatment, he complaining of colicky pains in the lower quadrant and which radiated into the small of the back, and down the groins and to the end of the penis; the only position seeming to afford any relief being, to lean over the back of a chair, so as to bring pressure to bear on the lower abdomen. I found that he had a temperature of 102° F.

My patient is an intelligent man, an electrical engineer, and a good deal of his time is

spent sitting at his work. He has used tobacco to excess, but never touched alcohol.

He had noticed just before his visit to me that the urine was thickened and of a cream-like color, and severe stress and pain were felt during its passage, he informed me.

After carefully going into the case, I learned that in October, 1912, and covering a period of three weeks, he had had a similar attack, which he described as follows: "Severe pains to the left of my stomach [abdomen] or groin, with a distress and burning sensation of the penis. The only relief I could obtain was, by pressing my 'stomach' over the back of an upholstered chair. November 4, a doctor was called." Ice bag and opiates did not afford any relief. On the 17th of November, another attack of severe pain was experienced, and there passed what, from his description, must have been gravel. Since that time he has been virtually free from any symptoms. Pyuria was what attracted the patient's attention on May 24, last, and pain drove him to my office.

Now for the interesting part!

I wrote prescriptions for (a) arbutin compound (Abbott) and (b) H-M-C modified, No. 1. Then realizing that the man was in pain and anticipating that the poor fellow would have the devil's own job to get the prescription filled, I took from my medicine-cabinet some tablets of each of the two compounds and gave them to him. There was only time that night to take one tablet of each kind, and the patient, and physician as well, were greatly surprised when, in the morning, a calculus 1 1-8 inches in length and about 1-8 inch in diameter was passed—with, of course, accompanying pain.

I am just optimistic enough to believe that the medication effected this wonderful result.

PHILIP A. E. SHEPPARD.

Dorchester, Mass.

#### ACUTE INDIGESTION

Will some good, charitable, experienced brother be so kind as to give us, through the courtesy of this journal, the pathology and pathological history of that all too common and too malignant disease of the newspapers, the laity (and also occasionally reported by the profession) that is called "acute indigestion"? Scarcely a day passes but that we notice a report of one or more cases of this extremely serious disease, and I have to admit my ignorance of any definite etiology or

pathology, aside from that of my own very limited and original stock.

Almost all of us have seen our share of it, and it seems of sufficient importance to warrant the closest investigation of its true inwardness.

So far, I've made no postmortem observations and had but little means of acquiring any definite pathological knowledge, as does happen in some others; hence, a little light turned on just here would be appreciated. And right here I want to whisper in your ears—the fellow who fails to obtain light from every page of *CLINICAL MEDICINE* is wise, indeed; each issue is a solid month of practical experience in every branch of medical science.

LEWIS W. SFRADLING.

At' ens, Tenn.

#### **SODIUM CACODYLATE BETTER THAN SALVARSAN**

It were a good thing if physicians could be made to understand that sodium cacodylate (dimethyl arsenate) will do all that salvarsan and neo-salvarsan can do, while being much safer to handle. However, several years of experience with this remedy, administered intravenously in a wide variety of conditions (and at first, it must be admitted, with many failures), have convinced me that our current dosage is too small. For some time my practice has been never to give less than 10-grain doses, and often even as high as 30 grains, repeating the dose in four days. Those cases that failed to respond to the 10-grain dose have cleared up quickly under the 30-grain dose, and I have never seen any constitutional arsenic-symptoms arise from this large dosage.

In treating syphilitic lesions with cacodylates, we should employ mercury either before or conjointly with the cacodylates, otherwise we are likely to produce that spirochete-fixation often produced by the salvarsan preparations, and known as the arsenic-fast condition. In tertiary lesions, iodine should be prescribed in conjunction, inasmuch as iodine is a liberator of encysted spirochetes and the cacodylate an eliminator by way of the lymph and blood streams.

The cacodylates are valuable remedies for many pathologic conditions, including skin diseases, as well as for infections, while the tonic and alterative properties of arsenic are well known.

We should administer more remedies by the intravenous route. The administration

of thousands of injections during the course of several years gives me the assurance that this is a rational and safe procedure to follow.

W. N. FOWLER.

Kalamazoo, Mich.

#### **THE COUNTRY DOCTOR**

The writer is seventy-seven years of age, fifty-two of which he has devoted to the service of the sick and of the well, forty years having been spent in country districts as a physician and surgeon. For thirty years we have resided in Florida, three of which were passed in the city of Jacksonville—from 1886 to 1889. In July of 1888, the yellow-fever was declared to be epidemic. During its progress, we treated, as a member of the bureau of medical relief, over 300 cases, with a record of 6 deaths.

These personal notes are but introductory to an answer to an editorial in the *April World*, which calls for "more expressions concerning the aged."

The lot of the country doctor is a hard one. Yet, withal, it has its advantages over that of the city physician, inasmuch as the country life is a simpler one and is passed under conditions more favorable to longevity. The doctor's environment likewise tends to a better condition of health. Moreover, he is not so subject to the temptation of stimulants and narcotics as is the physician in the city.

The average doctor entering upon a country practice soon becomes tired of this life of isolation from kindred minds and exchange of thought, which cannot be obtained from medical literature alone.

While the city exacts a greater tax on a physician's time and strength, still, if his time is judicially utilized, he can find enough of it for relaxation and congenial recreation. In a country district such as Gilmore (our home, and a very healthy locality) one may not reach the city more than once a month. As to music and literature in the city, the movies take in all we are able to compass in the time spent there.

In the past few years, it has often been repeated to us, "What shall we do when you leave us?" The people here realize that it will be hard lines for them to depend upon the city for medical and surgical aid.

We are the patriarch of our community. We preach for the people without pay. There is no lawyer residing in our place, and we have had no case in court for twenty-five years.

Had we depended on the income from our practice, we should have been left, in our old

age, like many of our brethren, dependent; with no pleasant outlook between us and the grave. The income from practice here amounts to less than \$500 per year.

What doctor will bury himself and wife in the grave of unfulfilled desires for such an income?

Take the case of the wife, who is the recipient of the troubles of other wives, how many of these latter complain of their isolation and the absence of such privileges and things that make life less of a burden in the city. The overwork of the farm women and the fear of the same lot for their children haunts them. Then there is the absence of those aids to ease of work which their sisters in the city possess, such as water in the house and other domestic aids and comforts.

We were talking one day with one of our women patients on the advantages of country outdoor life to women, and she said: "I would rather do farm-work than that of the household. So would my husband, possessing, as he does, all sorts of improved implements to aid him in his work. Farm-work takes me out of doors into God's sunshine and pure air. Men do not love housework; my husband says it would kill him. I love to work in the garden; but what with getting up of meals for the men folks, tending the children, and looking after the mending, I find no time for gardening. Then, again, there is music and literature. I am too tired to read and my piano is rarely opened."

Gilmore women have not the woes of the majority of farm-women. How many of the latter, because of their remoteness from good surgeons, good nurses, and good hospitals, are dragging about, suffering perhaps from some complaints peculiar to their sex which might be relieved in a short time by a simple operation and a trained-nurse's care. Thanks to the knowledge imparted to us by our revered teacher, the late Dr. J. Marion Sims, we have been able to aid our Gilmore women in these troubles. Hence, they do not suffer as do the average of their farm-sisters.

As a rule, the country doctor is not properly credited for his trials and the sacrifices he makes. However, there are two noted writers who have well depicted, and meted out justice to the country doctor, namely, John Watson (i. e. Ian Maclaren), in his work, "Beside the Bonnie Brier Bush," and Honoré de Balzac in his "Country Doctor."

An experience of over fifty years has convinced us that our best city doctors are mainly exiles from a country practice. A successful country doctor (by success we do not mean financially) must be resourceful

and full of expedients to meet special conditions, that are much more easily met by the city physician.

But the day of the oldtime country doctor is rapidly closing. The automobile and good roads are fast bridging the chasm between the city and the country precinct.

Ill fares the land to hastening ills a prey,  
Where wealth accumulates and men decay,  
Princes and lords may flourish or may fade,  
A breath hath made them as a breath can make,  
But a bold peasantry, a country's pride,  
When once destroyed can never be supplied!

—GOLDSMITH.

This applies to the fast disappearing country doctor.

The national and state governments provide amply for the physical welfare of animals—in Florida the hog has more rights than the human! There are agricultural colleges, both national and state. There are also county agricultural advisers. Why should not the governments appoint medical servants of the people, who would also act as local advisers and sanitarians? Such would only have to be used to be appreciated financially and otherwise.

The increase in healthfulness of the nation, and the decrease of intemperance, and resulting crime, would be a most valuable asset to the nation and a great blessing to the people at large.

See how much would be saved for public revenue if the vast amounts paid for quacks and quack medicine were diverted to the government from the present appropriators. Then, the vast saving, financially, to the people themselves.

We, at our precinct, look after the midwives and train them for their work, seeing to it that they properly record births and deaths, ourselves losing thereby many a confinement-fee. This should not be in the cases of others who have not our financial resources (not obtained from our practice!).

We think the country doctor should be a government official, empowered to inaugurate such sanitation as may be necessary to the community, for which he is appointed to serve, and be paid for such service out of the public funds.

This paper is largely ideal in its conceptions, but only by having ideals, which we strive after, do we reach practical results.

More completely to answer the editorial request, we would close this article as follows.

"Why are so many old men afflicted with urinary derangements?"

We would answer in the words of a noted publisher with whom we were conversing in

New York during the year of 1882. The subject being the illness of a mutual acquaintance, we enquired as to the cause of his illness. "*Early piety*," was the answer.

We have proved recently, by means of the microscope, that we are still prepotent, yet, not as virile as at twenty-five.

There are two codes of morality recognized by man, *but not sanctioned by women*.

How many young men reach the age of twenty possessing the same purity as do their sisters?

Many cases we have treated of uterine disease which, upon close investigation, we found owed their origin to the husbands' "*early piety*," although the marriage relationship had been strictly pure.

We, at seventy-seven, have no urinary or renal troubles and can wield an ax as well as most men at fifty. We have from two to three movements every twenty-four hours. We have never been troubled with a venereal complaint.

It is recognized in science that five times the age of the bone development determines the proper age of the animal. If this is true, man ought to live to the age of one hundred years. *We hope to!*

A. T. CUZNER.

Gilmore, Fla.

#### THE CAUSES OF PELLAGRA AND THE DIETETIC FACTORS IN DISEASE

Next to cancer, pellagra is the most difficult problem with which we are now wrestling and its cause is a conundrum second in difficulty only to that of cancer—yet, equally simple when the same thorough-going scientific method of investigation is applied.

More or less satisfactory results in the treatment of pellagra are being obtained by methods that are largely empirical, the same as in cancer; for, it must be admitted that no treatment can be altogether scientific or uniformly successful that is not based on a definite understanding of cause, or, rather, of causes, inasmuch as there is no single cause for any disease, and certainly not for pellagra or for cancer. The bane in the science, or, rather, art, of medicine, that which stifles progress today, is this notion about "*the*" cause and "*the*" cure, the idea that there is one cause for a disease or that one means of treatment can be successful.

Disease is a departure from the normal condition of health, perfection of which can exist only in the ideal. Life is maintained by

adaptation to environment, in which several factors are concerned; departure from the normal in any one of these factors brings about a condition of lowered vitality favorable to the development of whatever disease may be induced by a lowering of that factor, and this deficiency may properly be regarded as its specific cause; but is not "*the*" (sole) cause nor necessarily the principal cause of the malady.

The science of medicine needs for its very foundation a definition of health, of disease, of the means by which life is maintained, of the factors in this process, so that there may be a definite basis of procedure for the restoration of normal conditions—a real science and art of healing.

The history of medicine shows that there have been constant efforts to establish a positive doctrine of disease and of cure, one "*school*" succeeding another, until now we have arrived at the germ-theory, the dominant notion today of the nature and origin of disease; it is the dominance of this theory that leads to the conclusion of a very interesting discussion of "*the cause of pellagra*," as seen by a veteran," as printed in *CLINICAL MEDICINE* for September, 1916; to wit: "I don't believe that the cause of pellagra has been discovered as yet, but, when it is, it will be found to be a microbe or something of that nature, Doctor Goldberger's theory to the contrary notwithstanding."

Dr. W. J. Kerr, the writer of that article, as chief surgeon at Andersonville in 1864, saw more cases of pellagra than anyone else has ever seen, and he very carefully investigated the disease (then called scurvy) in conjunction with Prof. Joseph Jones. Doctor Kerr says that "there are more misleading articles published as to the cause of it (pellagra) than concerning any other disease"—except cancer, he might have added, if he is following the work on that malady. He further declares that the idea about its dietetic etiology is wrong, that many pellagrins are of the wealthy class, and that "the poorest people in this part of the country (Texas) have had no pellagra among them at all."

The editor of *CLINICAL MEDICINE* "declines to be inveigled into a defense of the Goldberger theory," inclining to Doctor Kerr's opinion, and further emphasizes the dominance of the germ-theory.

Now comes another authority—Dr. J. F. Yarbrough, of Columbia, Alabama—to challenge the Goldberger theory; this investigator concluding that two factors should be considered in the treatment, namely, dietetics

and drug therapy. His idea is that "carbohydrates must be eliminated if recovery is to be expected" and that "pellagra will never be treated successfully by the general practitioner, because the diet cannot be controlled in the home."

Doctor Yarbrough, writing in *The Medical Record* for September 2, 1916, quotes an article of his published in *The Southern Medical Journal*, in which he urges the dietetic etiology of the disease as positively, it seems to us, as does Goldberger, but he challenges the statement of the latter, in *The Journal of the American Medical Association* for February 12, 1916, that "hereafter the clinician who would attribute therapeutic value to any drug or any remedy in the treatment of pellagra should be prepared to show, what has not heretofore been done, that the curative effect cannot be attributed to the diet."

"Pellagra," Doctor Yarbrough writes, "is an autointoxication, the result of a carbohydrate diet in which there is practically no protein. This carbohydrate, or alcoholic, material, when taken into the stomach, is quickly converted by the normal heat of the body into what distillers call 'sour mash'—three times daily, for weeks and months. Finally it so cripples the metabolic activity as to permit this fermented material to be taken into the circulation without the necessary chemical changes. As a result, the victim's metabolic function is practically destroyed by eating alcohol, and the result is, the varied and complex symptoms we call pellagra." Doctor Yarbrough is "convinced, after thorough study and many clinical experiments conducted in the hospital, that the correct etiology of the disease has been discovered."

This explanation of "the" cause of pellagra is practically identical with Goldberger's, which has been accepted almost universally in the South, if one may judge from the discussion at the recent conference of the Southern Medical Association on pellagra.

I am satisfied, from a careful study of all the investigations into the etiology of pellagra that have been made public, as also from a special opportunity to consider the work done in its investigation in America by Dr. E. M. Perdue, of Kansas City, and that of Alessandrini and Scala, of Rome, that diet is but one of the factors in the causation of pellagra (as it is in every other disease), and also that it is the most efficient means of cure, as diet is in every disease. However, I hold that the diet is not the only curative means,

and that, while there may be—no doubt is—a specific germ concerned in this disease, as in most others, what may properly be called the specific cause of pellagra is to be found in the water peculiar to our southern states, the same as to a part of Italy (as explained in Doctor Perdue's book recently published), owing to the peculiar geological formation of the respective regions.

I am writing this article because I am satisfied that the important truth embodied in the etiology and consequent treatment offered by Goldberger, Yarbrough, and others is not the whole truth, and, hence misleading, and that their remedy, while it serves as an alternative and brings about a recovery from pellagra in most instances, is, yet, pernicious in the extreme; a proposition which I will establish as fully as the limits of the space at my disposal here will permit.

It so happens that in the same issue of *The Medical Record* in which Doctor Yarbrough's article is published Dr. Robert Curtis Brown, of Milwaukee, demonstrates that aside from their effects in causing auto-intoxication, through putrefaction of their residues in the lower alimentary canal, animal-proteins cause serious poisoning, directly, by the absorption of poisonous elements formed in them (which the carnivora are especially endowed to neutralize), and which he shows frequently to be the chief source of serious ailments attributed to other causes.

The author of "Health Through Rational Diet," despite his many flagrant errors promulgated and his conspicuous contradictions, correctly points out that meat should not be given to children, because the thyroid gland is not sufficiently developed in them to neutralize the poisons engendered by it. So, also, John Burroughs has recently told us (*Ladies' Home Journal*, May, 1915) that, after several doctors failed to recognize the cause of many distressing symptoms by which he was constantly affected, he himself finally discovered it to be the eggs in his diet. Having thereupon eliminated these entirely, he has been free from those symptoms.

To one capable of surveying the field of medicine at the present day intelligently and impartially, the most conspicuous (and the most lamentable) fact is, the variety and discordance of views as to the causes of disease and the proper means of treatment. A good example of this chaos is found in pellagra. Seeking for the causes of this state of affairs, we find that the subject is one of extreme difficulty, that few of the investigators have been capable or willing to divest themselves

of opinions and doctrines settled upon them before they were capable of original investigation; consequently, a maze of erroneous conceptions enshrouds the few important truths that are firmly established, and each "school," each investigator holds tenaciously to the small truth and the large error handed down to him, and opposes the truth embodied in other theories.

It ought to be obvious to any capable physician—it would be obtusive if he had been schooled in the true principles of disease and cure—that diet is a large coefficient factor in the cause and cure of every disease and that wherever the other coefficient factors are active or even where they are not below the average, where the diet is bad (as it is among almost all classes in our southern states), especially that particular disease will be likely to be established the specific cause of which is favored most thereby—malaria in south-eastern Arkansas, tuberculosis or infantile paralysis in New York, cancer in a waiter in a London inn, in a commercial traveler, or a servant in the home of a Sacramento millionaire (vide Hoffman's recently published world's statistics, in which the bare fact is mentioned that house-servants have triple the average cancer rate; also Kellogg's analysis, showing that commercial travelers in England and America have an extraordinarily high rate, and Californian cities the highest for cities, this clearly indicating, when taken with other available facts, the specific cause of cancer), or, pellagra almost anywhere in the South, where its specific cause in the drinking-water is always ready to precipitate that disease. This latter fact we find illustrated at Andersonville prison, where the diet was bad, the vitality of the men lowered by bad housing, extremely unhygienic in every way, and the drinking-water always furnishing the specific cause of pellagra, and where thousands became pellagra victims.

It would be impossible for Doctor Goldberger or Doctor Yarbrough to develop a case of pellagra at Eureka Springs (Arkansas) or at Belfast by any method of dieting, or anywhere else where the specific cause is not furnished in the water. On the diet furnished in Doctor Goldberger's experimental cases, on the average bad diet in the South, and especially with the bad mental condition prevailing among prisoners and among the poor of the South, with the water found in the southern states filtered through similar geological strata as those of a great part of Italy, rich and poor alike readily contract

pellagra. In a residence of six years in the Ozark Mountains of northwest Arkansas, I have never heard of a case of pellagra, not one victim could be found in Ulster today, with hundreds, perhaps thousands, subject to all the active factors, except the one furnished in the water, where alone we can find the specific cause of the disease.

The harm done by the wrong theory of etiology offered by Goldberger, Yarbrough, and others is both negative and positive. The disease is not prevented, by treating the water as Doctor Perdue and his eminent Italian precursors in the investigation advise, while the diet advised by Goldberger and Yarbrough for prevention and cure is as bad as, if not worse than, that which favors the development of any disease, as determined by hereditary predisposition and other conditions; for, their curative diets, and especially that of Doctor Yarbrough must eventually leave the last state of the subject worse than the first, as has been suggested in the article by Doctor Brown referred to.

THOMAS J. ALLEN.

Eureka Springs, Ark.

#### MORE LIGHT ON PELLAGRA

It seems as though there is a continuous cry for more light on the subject of pellagra, and, while I have been mum for a long time, the spirit now moves me to invade your columns once more.

Lately, it seems, a great deal is being said about acidosis and the alkaline treatment of pellagra, and it appears that nearly all pellagrists admit now that acidosis is present. Consequently, alkaline treatment is most successful and is superseding all others. The problem is, what acid substances are present in the system, what caused their accumulation, and how do they produce the symptoms?

In an article by Dr. E. M. Perdue, following one by myself in the March, 1915, issue of *CLINICAL MEDICINE*, he attributes the acidity to hydrochloric acid; and in another writing he states that it is concluded from certain conditions that it must be that acid. Now, biochemical tests are usually very difficult and evidently the author did not demonstrate positively that the systemic acid is hydrochloric acid. Consequently, it may be some other acid not an organic one, for instance.

I believe it is organic, but possibly phosphoric. There is no getting around the fact that a brownish pigment is produced in the skin of pellagrins, and when the skin clears

it does so by desquamation of the superficial layers containing the pigment. It is pretty well established that melanotic pigment in the skin is practically always produced by an oxidase (tyrosinase) acting on substances containing phenolic hydroxyl, and these are mainly amino acids in the body. The ketonic acids are not concerned, because they are taken care of by carbohydrates.

It is strange that no one seems to have noticed that about the time pellagra started in the north of Italy and roundabout the region, the wine-growers found a foreign market for their first-grade wine, while the poor people, consequently, fell back to drinking a third-class wine—which was the remnant from the first and second pressings, and which contained most of the acid potassium tartrate. It contains almost no alcohol, the tartrate not being very soluble in alcohol. In France, probably the same thing happened, but there the people later began to take large quantities of soda, and naturally the pellagra disappeared. In the United States the appearance of pellagra seems to have been coincident with the extensive use of canned and refrigerated fruits and vegetables, which are usually picked not fully ripe and contain the acids that have not been converted into esters by oxidases.

I am asked why, then, do not the poor of the North contract pellagra the same as the poor of the South? Well, the South has long hot summers in which our cutaneous capillaries are continuously dilated, thus permitting a much lessened circulation of blood through the internal organs that are fitted by nature to excrete these poisonous phenols. In the North, cold contracts the capillaries, stimulates circulation through the liver, spleen, kidneys, and the like, and amino acid extractives are thrown off and do not accumulate as when the circulation is sluggish.

The dark skin of natives in warm climates evidently is a provision of nature to assist the internal organs in throwing off these amino acids by oxidation and converting them into harmless pigment, which is continually being worn off the skin and gotten rid of. The skin of negroes contains four times as much oxidizing iron salts as that of the whites; therefore, it is reasonable to suppose that their skin will excrete four times as much waste product, amino acid, as a white man's, and that they will be less subject to amino acid toxemia than are whites.

I believe that here is a new thought in this direction and that it lays bare the secret of why dark-skinned races are better adapted to

hot climates than are white-skinned people; I should be glad to hear what the Editor and other friends think of this conception.

GEO. D. FAIRBANKS.

Brownsville, Tex.

#### FAILING HEART IN THE AGED

I was interested in Doctor Spradling's little article, in the October number (p. 861) of *CLINICAL MEDICINE*, on the failing of the heart in elderly people. These cases are numerous. As the Doctor says, "the treatment is not well understood." I myself at present have under care such a patient, a coal-miner past fifty years and whose weight for several years has been 15 pounds below normal. He has been afflicted with a heart trouble for a number of years, but it is worse lately. The valves are sound and the action is good, except during his "spells." The longest of these attacks lasted three hours. He eats normally, his digestion is good, the bowels are regular, the liver is all right, and the urine is normal, except for some hyperacidity. The spells only seem to come on at about the middle of the day, never at night. He has been troubled with a "lame back" nearly all his life.

Without warning, the heart beat suddenly jumps to about 150 pulsations; respiration becomes difficult; feet and hands are cold and clammy; face pale; cold perspiration on forehead and neck; eyesight becomes affected; finally he may lose consciousness for a few moments, but not always. He remains in this condition till the attack leaves him, which is just as suddenly as it comes. He will make a little jump, like one getting a strong electric shock, and say, "Well, I can feel that clear to my toes"—and it's all over.

I have formulated a course of treatment looking mainly to improvement of nutrition and elimination—not knowing what else to do. He gets a small dose of a saline laxative three times per day; neuro-lecithin compound, one pill, three times per day; sparteine sulphate, 1 grain every four hours, alternated with strychnine and phosphorus compound four times per day. For the relief of the spells (I have seen him in only two), I have given 30 minims of Lloyd's hypodermic lobelia. The first time, relief came as soon as he vomited, which was in about twenty minutes. The second time, he was relieved before he vomited, which was in about five minutes. Incidentally, I will say here that I nearly always get an emetic effect from this preparation.

What attracted my attention to lobelia for this patient was, that some writer has been lauding it for surgical shock; and this man's condition was identical with surgical shock. I shall continue using it when occasion presents. I believe lobelia will act more quickly than almost anything else when used hypodermically, and in these cases minutes are hours to your patient.

Edgewood, Tex.

T. H. STANDLEE.

#### ACUTE FOLLICULAR TONSILLITIS AND OTHER ACUTE INFECTIONS OF THE THROAT AND NECK

I have read with much interest Doctor Wolverton's article on the treatment of acute follicular tonsillitis, which appeared in *CLINICAL MEDICINE* for November, page 922, and have no special comments to offer, except on the last part of his treatment of this affection.

Doctor Wolverton's broad advice to "apply an ice-bag to the throat or ice-water irrigations directly to the tonsils" impels me to say a few words, in the hope that possibly others may profit by my own experience.

I contend that the first thing to do, as a routine beginning of treatment for inflammatory conditions of the neck and throat due to infection, is, to interdict the use of cold in any form, not even allowing the patient to drink cold water or to rinse the mouth with cold water. This is not based on theory alone, but on actual experience during a period of fifteen years of practice.

When I am called to a patient suffering from a cold, adenitis, pharyngitis, tonsillitis or the like, the first thing I do is to act in accordance with the foregoing idea and, instead of cold drinks, I almost always order hot applications, such as hot-water and turpentine stupes or hot-water and magnesium-sulphate stupes. The beverages also must be hot, no limit being put upon hot water. While hot water in these cases will do all the good that cold water can do, it never can do harm.

Hot water is soothing and relieves congestion, cold water does the same thing after reaction sets in, pain often may be relieved by cold applications, hot-water applications relieve pain by relieving congestion and there is no danger of chilling the patient, thus causing renewed congestion and autotoxemia. Hot water and hot stupes stimulate the functions of the glands and tissues.

It may not be out of place to adduce a few cases of general interest as follows:

A child two years old had inflammation of the submaxillary glands on both sides, tonsils were swollen, pain and swelling on the left side extended up to and behind the ear, the glands of the neck on both sides were swollen, the temperature was 102° F., breath was fetid. I ordered a 25-percent hydrogen-peroxide swab three or four times a day. Every twenty minutes 1-10 grain calomel was given on the tongue until 10 doses were given. One hour after the last dose I gave a saline laxative, continuing the latter in dosage sufficient to move the bowels three or four times every day. Other measures were as follows: Anoint the throat and neck with a mixture containing 5 percent of glycerin. Keep the throat and chest well covered and warm. Withdraw all solid foods; if the fever continues, give the child no milk, except it be incorporated with a cereal mush, this tending to prevent large curds in the stomach.

And, to repeat, allow no cold applications, and no cold drinks. Hot drinks, hot water will relieve thirst and reduce fever. Of course, other remedies were given as indications demanded.

Another case. A child ten years old was sent home from school. The school-physician had a swab of sputum examined and diphtheria germs were found a few days later. There were present chills, fever, headache, inflammation of the throat, swollen glands and tonsils, a cough, difficult swallowing, and the other symptoms, and a grayish coating appeared in the fauces.

I withdrew all cold drinks, swabbed the throat with 25-percent hydrogen-peroxide solution every three or four hours. (Be sure to reach the folds about the tonsils and all the recesses of the throat.) Calomel, in 1-4 grain tablets, was given every half hour for four doses (the tablets seemed to disintegrate in the mouth), then 1 tablet three times a day for three or four days. One hour after the last of the course of four tablets of calomel, I gave one dram of saline laxative in water, repeating the dose every half or three-fourths of an hour until the bowels had moved three or four times. (If the bowels do not move in one hour after the fourth dose of the saline. I give an enema of warm water.) The laxative saline should be administered three times a day in dram-doses, beginning the day after the first course, so that the child will have at least three copious stools each day.

By way of external applications, I started with hot-water stupes. One of the best is, 2 drams of magnesium sulphate in a pint of

hot water. Wring a towel out of this and apply every five or ten minutes, for one hour, then wrap the throat with a hot dry cloth and leave it on until dry and cool. Then I anointed with the 5-percent ichthyol-glycerin mixture and wrapped with soft flannel. The boy got well and went to school the next week.

A girl playmate from the same school living across the street became sick a day or so before this boy did. The family physician had her placed under quarantine for diphtheria, and she remained out of school for two months.

Then there were two schoolgirls, eight and ten years old, respectively, to see whom I was called one Tuesday morning. Both were suffering from tonsillitis, their temperature being 102°F. The treatment was about the same as in the preceding case. Both returned to school the next Monday. A schoolmate and playmate opposite the street became sick at about the same time. She attended the same school, and her physician kept her in quarantine for diphtheria, for about two months.

I cite these as parallel cases treated by other physicians to illustrate the fact that nearly every case of diphtheritic infection can be aborted if treated in time, and on my plan. I rely upon two gargles for use in suspected cases, as well as those that are diphtheritic. Their composition is as follows:

Gargle No. 1. Tincture of ferric chloride, oz. 1-2; mercuric chloride, gr. 1-2; antipyrin, gr. 1-12; glycerin, oz. 1; water, enough to make 4 ounces. Gargle every one to three hours.

Gargle No. 2. Take 3 tablets (known as "tonsillitis") containing sodium salicylate, gr. 3 1-2; sodium bicarbonate, gr. 3 1-2; boric acid, gr. 3 1-2; dissolve them in a teacupful of hot water. Use 1 teaspoonful every three hours as a gargle.

One may prescribe both of these mixtures, instructing the patient to gargle with them, alternately every one and a half or two hours for a day or two. Useful especially in severe cases.

When the pain and fever relax, I have the patient discontinue the iron-mixture. I instruct the patient to swallow 4 or 5 drops of the mixture at each gargling—that brings the solutions closer to the pharynx and exerts other beneficial effects. [Why not use the spray? Gargles do not reach low down. Few people can gargle properly.—Ed.]

The mother or whoever has charge of the patient, if not able to understand the instruc-

tions, should be shown by the physician how to administer the applications. The tablets for gargle No. 2, I carry with me and prepare the solution at the bed-side, thereby giving a cooling antiseptic gargle for the throat before I leave the patient. The cost is little, the impression on the parents and patient good.

This paper is not intended as a treatise on throat diseases, but simply as a leader for general procedure in the treatment, especially, of acute infectious inflammation of the throat and glands of the neck, the main object being, to call attention to the promiscuous if not pernicious use of cold applications and cold drinks in these conditions, which are so injurious to the average victim.

R. WILLMAN.

St. Joseph, Mo.

#### CHLORAZENE IN GONORRHEA.—PITU- ITRIN IN PARTURITION

The following experience in one case, with chlorazene I think is worth reporting:

A married man, who was suffering from chronic gonorrhea, told me that he had used "everything" and, that several times he had thought that he was cured, but the discharge always would reappear. I suggested that doubtless his wife was infected by him, so that it would be useless to treat him without also treating her, and advised a course of phylacogen for both of them, in addition to local treatment. However, as he was going away to a grading camp, he could not then undertake the phylacogen-treatment. So, in its place, I gave him a box of chlorazene tablets, with instructions to use as an injection and wash; also, some santal oil for internal use. In the meantime, during the man's absence, I used the phylacogen on his wife, together with chlorazene-solution douches.

When the man returned, he was free from every infection, and he has remained so for now two months; so, I think, chlorazene will have to get the credit for his cure. His wife also is free from any indications of the infection.

Here are two other items that may interest some readers:

Pituitrin is a sheet-anchor in obstetric work, if properly used—but, it must *not be used too soon*. Recently I had a lacerated cervix to repair, another physician having been too hasty and given the woman a 1-mil injection of pituitrin. Her first confinement had been normal. In this, her second one, as she told me, her pains just a few minutes after the injection were awful; especially one pain,

when the baby came, was the worst, she said, that she ever had experienced, while the bleeding was difficult to control. Her cervix was badly lacerated. All this was caused by the pituitrin.

I have never had this trouble with this preparation, as I study my patient and begin with a small dose, repeating as needed, except in multiparas in whom I find complete dilation and no expulsive pains. In that case, I give 1 mil of the pituitrin and then expect (and get it, too) the baby in from five to twenty minutes. I have never had hemorrhage from its use; rather, experience teaches me that it will prevent postpartum hemorrhage by causing uterine contractions.

North Powder, Ore. C. H. LAW.

### THREATENED INCREASE OF SECOND-CLASS POSTAL RATES

It is understood that in the new Postoffice Appropriation Bill, an amendment will be included, very decidedly increasing the rates for second-class mail matter. It is proposed to divide the country into eight zones, corresponding with the parcel post zone, the rates to be adjusted according to distance. Following is the scale of charges:

"Local, first, second, and third zone (under 300 miles) 1 cent per pound.

"Fourth zone (300 to 600 miles) 2 cents per pound.

"Fifth zone (600 to 1000 miles) 3 cents per pound.

"Sixth zone (1000 to 1,400 miles) 4 cents per pound.

"Seventh zone (1,400 to 1,800 miles) 5 cents per pound.

"Eighth zone (over 1,800 miles) 6 cents per pound.

"Provided that free-in-county circulation provided by law shall continue as at present."

As everyone will be quick to grasp, if it becomes a law, this plan will principally affect the magazines of general circulation, newspapers continuing to have free circulation,

while the city newspapers, which rarely circulate more than 300 miles beyond the place of issue, will not be influenced. The literary, professional, scientific and trade press will be hit very hard.

If such a rule goes into effect, it will more than double the cost of mailing *THE AMERICAN JOURNAL OF CLINICAL MEDICINE*. If we add this extra expense to the increased cost of paper, which has greatly reduced the revenues of every magazine in the country, the effect will be to put many excellent publications out of the running. To survive, it will be necessary for many to increase their subscription prices.

In view of the fact that the Postoffice Department is said to have made \$5,000,000 during the last year, we can see no reason for this terrific tax upon American journals. If it is necessary to reduce the expense of running the Postoffice Department, we suggest a restriction in the franking privilege, which now is greatly abused by members of Congress and said to cost the government annually in the neighborhood of twenty million dollars.

We urge every reader of *CLINICAL MEDICINE*, who objects to paying more for his reading matter than he is now doing, to communicate with his congressman and senators, urging them to oppose this amendment to the Postoffice Appropriation Bill.

### "VANITY"—A CORRECTION

It has just come to our attention that we credited the quotation on "Vanity" in *CLINICAL MEDICINE* for December, page 1012, to Ik Marvel. This is an oversight which we regret deeply for, of course, it is Jerome K. Jerome who is responsible for the sentiment. It may be found in his inimitable "Idle Thoughts of an Idle Fellow," which served to establish Mr. Jerome's fame as a humorist. These "idle thoughts" not only help to while away an idle hour; they insist on remaining with you and making you think. They are far from "idle".



# Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

DURING the meeting of the Mississippi Valley Medical Association, last September, at Indianapolis, I met an old friend of mine—a prominent physician of Lexington, Kentucky, who took occasion to compliment me upon this department. He said to me that he always was interested in what I wrote, but added, "Why don't you give us some more 'heart throbs,' such as you used to write?" I replied by asking him whether he thought the old fellows, such as we were, cared for sentiment. "We doctors of sixty and beyond not only care for it, but it really does us good, now and then," he made reply. And, really, I myself felt the same way, although at the time I did not wish to express myself further than to promise him that I might undertake to write some more "heart throbs" should I happen to feel in the mood. Weeks passed without any attempt on my part to fulfill my promise, until I was reminded of it by a letter recently received from a mutual friend of ours, who informed me of the death of his son. This is what he wrote:

"It is hard for me to understand just why a bright young boy should be thus snatched from us, when he was the embodiment of life and of cheer and just passing from boyhood into manhood. My little wife and I are trying to be philosophical and meet our trial in a way that is becoming to those who have proper faith. It sometimes is hard to understand just why some things happen, but I presume it is not intended that we should know. All that we can do is, to accept them."

After reading this letter I said to myself it is time that we doctors occasionally stop from scientific work and devote a little thought to the cultivation of our sympathies, to indulge now and again in sentiment and in memories of youthful days, when we had "heart throbs," throbs that were too tumultuous, perhaps, but, nevertheless were life-giving, life-living.

No, my readers, I have no apology to offer for a little sentimental digression this month.

The river of life that flows through crowded cities and country districts, bearing along so many gallant hearts, so many wrecks of humanity; the many households, each a little world in itself, revolving around its fireside as a central sun; this river of life carries in its mighty current every phase of human joy and suffering. To be in it all, to be a part of it all—acting, thinking, rejoicing, sorrowing with his fellow men—that should be the life of the doctor.

We sometimes ask and wonder why there should be so much sorrow and suffering in the world? My answer is: We must learn that the sublime mystery of Providence goes on in silence and gives no explanation of itself, no answer to our impatient questionings.

We give ourselves over in secret to the beautiful poems of hope, while grief, I was about to say, shows itself unveiled. But, this is not always so, as we physicians well know. There are silent griefs that sap the mental and physical health, which can not be diagnosed in the laboratory. There is no grief like the grief that does not speak. There are silent sorrows that are despotically eloquent. The true, sympathetic physician will need no stethoscope to recognize these silent heart-throbs; he will be able to help these sorrowing ones by reminding them that, if one suffers, at least he lives. Think of the people who die but never have lived, not knowing what life might be in its fulness. Think of the eyes that have seen nothing, the heart that has throbbed neither to love nor to grieve. These are like plants that have withered in the depths of the forest, that have never been kissed by the sunlight, but which die without ever having put forth a blossom. God pity the man or woman who has not lived, who has not loved and lost: "Those who enjoy little shall suffer little; immense happiness entails unutterable anguish."

Yes, tonight I am in the mood for "heart-throbs." This reminiscent, melancholy mood

always comes to me in December, intensified, perhaps, as a result of my isolation, the absence of old friends, the crowding memories of bygone days. In the depths of some natures, the sensitive delicacy of youth lingers long after youth has departed. It is true, it should not concern us whether we are seven or seventy, if in our hearts there are the singing of birds, the sunshine that mellows the tree-top, the whisper of the winds that blow from far, far fields of verdure. The snow will cover the earth soon. Would that this white blanket might cover the sorrows and disappointments of the world—and, with them, those of my own.

When these thoughts stir in me, they take on a tinge of momentary desolation; that kind of melancholy which has sobs in it, involuntary and unrepressed. We listen to them as we do in dreams, and they seem, as Doctor Quincey so aptly put it, to have swept the fields of mortality for a thousand years. What, after all, is human life but desire, a longing for something beyond or behind us, a reaching out for something we never shall attain?

You doctor of sixty years, did you ever sit by the fire toward the closing of the year and sense the vision of the home of your youth, as it comes to knock at the gates of memory, comes in elm-shaded streets, displays its simple outline amidst a garden strewn with flowers and wafts to your nostrils the intoxicating perfume of the orchard? The whole scene fills your mind and invites you, like some divine woman whom you have known and who made herself at home in your heart. Have you ever, I say, spent a winter evening by your own fireside and given yourself up luxuriously to memories of love, of youth?

Need I tell you what a pleasure it is to let yourself loose upon the stream of your thoughts as a bird is borne upon its wings! While you watch the blue and crimson flames flicker and play about, a mysterious artist comes and draws a visioned face in the midst of those flaming, varying hues; a beautiful face, a fleeting apparition that no chance ever will bring back again. Farewell, essence incomplete and unforeseen. Ah! you come too early or too late. But, *we have lived!* That it is now only a vision in the firelight, is, perhaps, as much the act of Providence as is the fate of the flower that grew and blossomed, leaving its color and fragrance as a memory only; or, the passing of the moth that touched the perfect snow-white heart of a wonderful blossom, breathed

its fragrance, drank deep draughts of the honey in its chalice, trembled with the ecstasy of a moment for the coming of which it had waited this many a night, and then died. But, they both had lived. It was enough.

Your reverie prompts you to go to your desk and take from a drawer a little tin box holding three packages of letters written long years ago. You return to your easy chair by the fire and open the letter on the top of one of the packages. This letter, you remember, was the final scene in the one sweet tragic romance of your life. You read a portion of this message over again. Yes, these are the words, there can be no mistake: "I ask you, for the sake of the past, for the sake of the love that you know was as true and unselfish as Heaven itself, for the sake of the unforgotten, to return my letters."

You have treasured them jealously, these now yellowed letters, as you pick them up tenderly, one by one, and read again those loving words that you have read so many times, you repeat to yourself: "Yes, dear, I loved you, I loved you. Oh! just because, because it was you—you." And then you lock the door of your "den," poke up the fire and read them all—each one full of the tragic outpourings of her love. From within several closely written sheets, a lock of hair is suddenly released, and as it entwines itself about your trembling fingers a pain grips your heart and your throat seems to choke. Once again you inhale the fragrance of her lustrous tresses, once more feel the warmth of her pleading lips. And then you feel again the mist of sorrow in your eyes as you bade her a long goodbye.

You read on and live over again that delicious dreamy past. Her fingers were on your heartstrings then and it seemed as if you could not part from her. That was long ago! Then the letters came and went, letters breathing the unutterable sweetness of two passionate loving hearts. You are startled at the waking of these sweet memories, feeling again the ecstatic touch of hand and lips that thrilled body and soul as never before—nor since. But one day came a message, a message that darkened the face of the earth, making your life dull and commonplace and strangling your heart with the clutch of a disappointed love. Ah, here it is: "I hate to hurt you, but you are wrong when you think I am anything more than a friend." You read no more, for the memory of those bitter tears shed is all too vivid. They fell

very heavily on your heart then. You went about your work, but with an indescribable loneliness and weariness. With a sigh, you bundle up those letters, and the chapter in that one romance in your life is finished.

With a sense of relief, you take up another package and read the letter. They are signed, "Your loving mother." Nothing in them to cause you pain. She never failed to understand, nor were you disappointed in her love. You say with Ik Marvel: "What gentle admonition—what tender affection! God have mercy on him who outlives the tears that such admonitions and such affection call up to the eye."

The writer of these dear letters is gone, also—but, you are not asked to return them. They are yours, to comfort you when your heart is faint with life's struggle and you are sick of the deceit and selfishness of mankind.

The world with its whirl and riot, the cheers of your friends and the curses of your enemies cannot deafen the sweet counsels of that devoted mother that tonight come surging up through the corridors of your memory. And, so you reverently lay those precious missives back in the box.

There remained but one more package. The fire burns steadily now, not too fervently, but with a cheering, soothing warmth. You feel sure it will not go out, so, you let the package rest in your lap unopened and allow your mind to wander back over the events of your life.

Sitting there, with eyes half-closed, you see the dark shadows alternating with brilliant beams of crimson and gold resting upon your life. Far down in your heart, the delicious strains of another love steal with witching melody upon your ear, while the dismal whistling wind outside reminds you of those melancholy days of long ago when your soul was stirred to its very depths. It was then that the writer of the unopened package resting in your lap came into your life. She came with comfort in her heart, and she was a kindly listener. She became

the altar of your confidence, and you knew that at least by her you were beloved and understood, that she would forgive your errors and weaknesses, that to her you might unburden your soul without fearing harsh judgment, unsympathizing ears.

You open one of her letters and proceed to read. These missives are not filled with those passionate utterances penned by your first love, but, the words of this woman are calm and pure and deep; and while they do not fill you with the thrill and ecstasy as did the others, you now experience a peace and certainty "that passeth understanding." The impassioned yearnings of this woman's heart are not revealed in full measure until, near the bottom of the pile, you reach a letter which ends with "Always Your Devoted Wife."

And then you ask yourself whether you are not unworthy of such trust and sublime devotion. You have suffered—God knows—but she loves you better because of what you have endured. She is the light of your life, and you love her more than you have been able to tell her.

Laying down the letter and gazing over and beyond the now dying embers in the hearth, your thoughts formulate themselves: "It is somber gray, this web of life, but, it becomes silver when the light shines upon it and in the sun it glows with rainbow hues. A broken, distorted web is beautiful then, and mine is broken in many places, though I have spun as best I knew how. My love for you, dear wife, is the light upon my web, and ill-shapen and shattered though it be, there lies within its meshes a human heart."

Your reverie is disturbed—the fire has died out, and you become conscious of the persistent ringing of the telephone. A voice calls to you softly, a voice you love, one that has been very dear to you for these many years. Yes, there is the same tender thought of you as you catch the words, "Do not disturb yourself, dear, I'll answer the telephone."

"If you will sing a song as you go along,  
In the face of the real or fancied wrong,  
In spite of the doubt if you'll fight it out,  
And show a heart that is brave and stout;  
If you'll laugh at the jeers and refuse the  
tears:

You'll force the ever-reluctant cheers  
That the world denies when a coward cries,  
To give to the man who bravely tries.  
You'll win success with a little song  
If you'll sing the song as you go along!"

—R. McLAIN FIELDS.

# Among the Books

**TAYLOR: "A CONCLUSIVE PEACE"**

The author of this book, Dr. C. F. Taylor, the well-known editor of *Equity*, holds that a conclusive peace can come to strife-ridden Europe only by an international agreement for the tariff-free passage of goods from any country of Europe to its nearest harbor, independently of national boundaries. Although a federation of European states is, at present, impossible, this "harmonization" of its commercial conflicts can readily be effected by a commerce-commission appointed by a general congress of the nations. No military peace between European nations has proved conclusively enduring—nor will it ever do so. This monstrous war was absolutely unavoidable, for the reason that Europe "had no international organization, no clearing-house of mutual interests, no authorized body that could manage, adjust, negotiate, compromise, guide, and direct mutual affairs in the interest of all."

These views of Doctor Taylor, however, challenge criticism, for, the bane of his remedy is its assumed facility. In support he points to "the experience of the American states as a guide," which one time were "as selfish, arrogant, and jealous as any of the European states well can be," but, quite unaware, it seems, of the great difference between the two cases. Also, the famous but unfeasible method of catching birds by salting their tails is suggested by the following sentence: "Enough of the nations of Europe to dominate Europe, with the door always open for the rest, would make a successful beginning." Another bit of fatal facility is contained in the following assertion: "In the coming [peace] congress, the veil of secrecy must be raised, as the civilized world will demand full publicity." The Reviewer is curious to learn which are the constituent nations of this "civilized world" outside Europe that could "demand" anything from the latter. Evidently Doctor Taylor "can call spirits from the nasty deep." To this the Reviewer retorts with old Hotspur: "Why, so can I, or so can any man; but, will they come when you do call for them?"

While it will be impossible for everyone who reads Doctor Taylor's book to agree

with him as to the best plan of securing a conclusive, enduring peace, no one can fail to be impressed by the author's earnestness and sincerity and his belief in an innate humanity among the peoples now at war and that this better self ultimately must prompt them to arrive at some agreement for a permanent peace. It is greatly to his credit if despite all the combustions that keep setting parts of the world on fire he believes that we still live in a humanitarian age and that men still may act with "sweet reasonableness."

Without question, never before has the world seen so prodigal a shedding of ink accompanying so frenzied a flow of blood. "A Conclusive Peace" is but one among innumerable others in this war-book class. In whatever way the Reviewer may differ with the author regarding the methods to be employed for attaining a lasting peace, in his interest in the great question discussed and the ability and evident sincerity shown in the treatment of it, he, for the time, forgot the possible utopianism of the author.

In commending Doctor Taylor for having written this book, the Reviewer can but indorse the sentiment so forcibly voiced by Philip Gibbs: "More passionate than any other emotion that has stirred man through life is my conviction that any man who has seen these things, if he has any gift of expression and any human pity, should dedicate his head and heart to the sacred duty of preventing another war like this."

G. F. B.

**SHERMAN: "VACCINE-THERAPY"**

Vaccine Therapy in General Practice. By G. H. Sherman, M. D. Third edition. Published by G. H. Sherman, M. D., Detroit. 1916. Price \$2.50.

The third edition of Doctor Sherman's well-known book on vaccine-therapy, by its increased size, bears witness to the progress of bacterin-therapy and likewise to the favor with which it has met among general practitioners. The author is one of the early exponents, in this country, of bacterin-treatment in infectious diseases, and, while it would be going too far to call him an uncon-

ditional enthusiast, it is safe to say that he possesses a firm faith in the merits and efficiency of this newer treatment—a faith engendered by a wide and extended personal experience.

Doctor Sherman does not deal with theory more than is absolutely necessary, but prefers to come down to facts, and to drive these home. As we have said about the earlier editions of his little manual, it is an acceptable guide for the everyday use of this class of remedies by the physician who is not in a position to carry out extensive laboratory investigations and who, yet, wishes to do for his patients the best that can be done. We wish this book continued success and increased popularity.

#### HARE: "THERAPEUTICS"

A Textbook of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M. D., B. Sc., Sixteenth edition, enlarged, thoroughly revised, and largely rewritten. Philadelphia: Lea & Febiger. 1916. Price \$4.00.

It is rather amusing (or is it a sign of the times that, despite the insistent claims in certain high quarters that drug-therapy is rather useless and that any effect to be obtained from it is "purely psychical," at least in many instances) that textbooks on practical therapeutics, more particularly the one by Professor Hare, evidently are in such wide demand that new editions are called for at frequent intervals. The Reviewer finds, for instance, that the thirteenth edition was published in 1909; the fourteenth, in 1912; the fifteenth, in 1914; and now the sixteenth is before us. It is twenty-six years since the first edition of this textbook appeared, so that each edition was exhausted in rather less than two years. Surely, Professor Hare is to be congratulated upon the popularity of his work, which is manifested in such an emphatic manner.

For the present edition, the author was granted permission, by the Board of Trustees of the United States Pharmacopeial Convention, to use certain portions of the text of the new United States Pharmacopeia. This is of decided advantage, because the new pharmacopeia made its belated appearance while Hare's "Therapeutics" was passing through the press. In this edition, the official preparations of the new British Pharmacopeia also have been introduced.

Attention has been paid to the changes, in both pharmacopeias, in strength of galenical preparations, and every article has been revised, in an endeavor to bring the text up to the views generally accepted by the best physicians of the day, as expressed in current literature. It is of interest to learn that, simultaneously with the appearance of this edition, the third Chinese edition of this work has been published in Shanghai.

We welcome another edition of "Hare's" as we have welcomed many preceding ones, and we trust that the author will be called upon to prepare many further editions of this useful work.

#### BEATTIE: "POSTMORTEM METHODS"

Postmortem Methods. By J. Martin Beattie, M. A., M. D. Cambridge: The University Press, 1915. Price \$3.25.

This volume, one of the Cambridge Public-Health Series, is sold to the medical profession of the United States by the agents, G. P. Putnam's Sons, of New York. It describes methods of postmortem examinations, and it is intended that the book should be used in conjunction with textbooks dealing with pathology and bacteriology. Coroners' physicians and others who are in the habit of doing postmortem work will find much in it that is of value.

#### SCOTT: "MODERN MEDICINE"

Modern Medicine and Some Modern Remedies. Practical Notes for the General Practitioner. By Thomas Bodley Scott, M. D. With a Preface by Sir Lauder Brunton, M. D. New York: Paul B. Hoeber. 1916. Price \$1.50, net.

Ordinarily the teachers of the medical profession, that is to say, those men who write books, are the scientists, the theorists; and medical men in actual practice, those who follow the *art* of medicine, have neither the time nor the leisure to record their experiences and their acquirements. This is a pity, for, as Sir Lauder Brunton points out in the preface of the book before us, much valuable knowledge is lost in this manner. He also says that the medical profession, as a whole, could learn a great deal from old practitioners and regrets the fact that so few of these write at all.

Doctor Scott has done a service to physicians by his essays published here; for, the subjects discussed by him are of vital importance, the more so as they are treated with

the wisdom acquired during years of study and practical work. The little book ought to be read and studied; and not merely the actual text, but also that which is left unsaid and must be "read between the lines." should engage the student's attention. We hope that Doctor Scott may write more, for the common good.

#### KANAVEL: "INFECTIONS OF THE HAND"

*Infections of the Hand. A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand, and Forearm.* By Allen B. Kanavel, M. D. Third Edition, Thoroughly Revised. Illustrated with 161 Engravings. Philadelphia: Lea & Febiger. 1916. Price \$3.75.

The author of this book certainly deserves the thanks of all surgeons who are attendants to manufacturing concerns where injuries of the hand are relatively frequent; but the general practitioner likewise is indebted to the author for this beautiful study of infectious diseases of the hands because he is called upon often to treat them.

The arrangement of Doctor Kanavel's book is somewhat novel in so far as the practical discussions of simple localized infections, of light, minor clinical affections, and of grave infections, also the consideration of diagnosis in general, and of the general principles of treatment, precede the theoretical anatomical and pathological description of the hand and forearm. The reason for this is probably that the author was desirous of presenting practical and clinical information before entering into the theoretical studies.

The treatment advocated by the author very naturally is largely surgical, and he insists upon the importance of an aseptic technic. The reviewer regrets to find that the use of drugs such as nucleinic acid never has given any results in the author's hands because he himself has used solutions of nucleinate of sodium in infected wounds of the hand with success. The serum- and vaccine-treatment likewise is not viewed with any great enthusiasm, although the author admits that the field is a most engaging one. Our experience tempts us to go further and say that it is a promising one, indeed, that serious injury often may be prevented by the timely administration of a suitable bacterin which, of course, should be polyvalent and include all pathogenic organisms found in the wound. Wound infections in the hand are almost invariably due to staphylococcus albus and aureus, and it is just in staphylococ-

cus infections that bacterins are particularly efficient.

In the treatment of suppurating wounds, the author refers to Wright's recommendation for using a five percent sodium chloride-sodium citrate solution. We assume that the manuscript of this volume already was in print when Doctor Dakin's article on his new antiseptic, paratoluenesodiumsulphochloramide, was first published. We believe that this will be found of great advantage in the treatment of infected hands.

No difference of opinion, however, can detract from the very excellent and masterly manner in which the subject is handled and presented in this useful textbook and we hope that many more editions may become necessary.

#### BRADY: "PERSONAL HEALTH"

*Personal Health: A Doctor-Book for Discriminating People.* By William Brady, M. D. Philadelphia: The W. B. Saunders Company. 1916. Price \$1.50.

This is a book for the table of the doctor's reception-room, and one that also should be recommended to his patrons. This book is replete with sound, common-sense ideas and conservative-progressive information, however paradox this association of terms may appear. Doctor Brady handles the subjects of health and of disease in an easy conversational style that will appeal to the laity, but he gives much sound information and advice, without, however, attempting to replace the physician. Indeed, he is very insistent upon the necessity of consulting the physician in time, and maintains the opinion that everybody, certainly everybody past the age of thirty, should subject himself to a complete physical examination at least once a year, and that every family should secure the services of a physician by a definite business arrangement, under which the doctor is engaged by the year.

Doctor Brady's book is very readable. It is instructive and wise in its teachings.

#### KELLOGG: "COLON HYGIENE"

*Colon Hygiene. Comprising New and Important Facts Concerning the Physiology of the Colon and an Account of Practical and Successful Methods of Combating Intestinal Inactivity and Toxemia.* By J. H. Kellogg, M. D., LL.D. Battle Creek: Good Health Publishing Co. 1916. Price \$2.00.

It is not so very many years ago since Professor Bouchard called attention to the

importance of autointoxication of intestinal origin as a possible cause of many diseases, their exact origin having been obscure heretofore, and since he supplied a sane and reasonable basis for the old established view that the bowels must be emptied of their contents regularly if the body is to be healthy. Later, Professor Metchnikoff preached the gospel of the friendly bacilli in the lower intestinal tract, which should be encouraged with a view of checking excessive proliferation and harmful action of some colonic bacteria that might become pathogenic under certain conditions. As is well known, Metchnikoff believed that it was possible to produce normal conditions in the intestines, and, consequently, to assure a healthy state of the body, by the free ingestion of liquids containing the *bacillus bulgaricus*.

Still later, Lane of Guy's Hospital, emphasized the serious consequences following in the train of intestinal stasis, and, being an enthusiastic surgeon, he decided to cut the gordian knot by resecting the offending portion of the large bowel offhand and short-circuiting the sewer system of the body. Lane claims that the colon of the human body is far too large, in view of the considerable quantities of meat that make up our diet, and, therefore, attempts to improve upon nature by removing what he considered to be excessive and superfluous.

Lane's teachings have not met with unqualified approval, even by surgeons, and by many physicians his rather harsh method of treatment is anything but viewed with favor. Even though the importance of maintaining free and efficient elimination is admitted generally, most physicians maintain that this end can be attained by less severe methods and at much smaller discomfort and risk to the patient.

As a matter of fact, the actual mechanism of the functioning of the lower digestive tract was understood more clearly only in the most recent years, and, as the author of the book before us points out correctly, almost nothing has been known of the physiology of the colon, this part of the body being almost *terra incognita*. In the light of the more recent researches, he declares it as indubitable that the average colon in civilized communities is in a desperately depraved and dangerous condition. He believes, however, that methods have been worked out by means of which the colon may be reformed and made to do its work efficiently not only in ordinary cases but in by far the great majority of those cases that are thought by enthu-

siastic colon surgeons to be suitable subjects for surgical treatment.

There are few men living today who have devoted more study and continued attention to the subject of dietetics and digestion, in all their phases, than the author. In these studies continued for many years, the physiology and pathology, or, better, the pathologic physiology of the colon has received its due share of attention, and the author has arrived at the conclusion that:

1. "Constipation with its consequences is the result of the unnatural habits in relation to diet and colon hygiene which prevail among civilized people; that

2. "Patients are not constipated on general principles, but that there exists in every case of constipation some particular condition which is the immediate cause of the delayed intestinal movement, and which must be removed before definite relief can be obtained; and that in the great majority of cases this cause is mechanical in character, a fold, a kink, a redundancy, a contraction—in short, some real and tangible obstruction; that

3. "Practically every case of constipation is curable, and in all but exceptional cases without the aid of surgery. It must be added, however, that by cure is not meant the working of such a miracle that the colon will perform its function normally without attention to diet or other means which encourage colon activity, but rather that by observing certain rules and the faithful and continuous use of safe and simple means, the colon may be made to perform its functions in a regular and efficient manner, without the use of irritating laxative drugs."

Accordingly, the author discusses the anatomy, physiology and pathology of the colon, including that fateful catchbasin of trouble, the ileocecal valve. It goes without saying that the principal attention is devoted to the many causes of constipation, the various measures for controlling and relieving it receiving generous consideration.

It is a detailed study and investigation of the role of the colon with respect to digestive disorders, including constipation and intestinal autointoxication to which the volume before us is devoted. The author not only presents a careful discussion of the troubles and the ill health referable to these causes but also throws light upon their appropriate treatment, his methods having this in their favor that they do not induce any drug habituation that may be almost as seriously productive of evil if it is developed with respect to laxative drugs, as is the case in addiction to narcotics.

# Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

## Queries

QUERY 6270.—“Eczema of Trophoneurotic Origin.” A. W. T., California, asks assistance in a case of basal trophoneurosis that involves the face and produces a very severe eczematous eruption, and which has tormented the patient for about twenty years, despite the efforts of several of the best clinicians in the United States. The patient’s general condition is excellent. The “clean-up and keep-clean” method, as well as the usual laboratory methods have been ineffectually tried by our correspondent; also the acne-bacterin, mixed stock vaccines, and an autogenous bacterin prepared from the scales have proved useless.

You certainly are asking us to solve a difficult problem. When a severe eczematous eruption has existed for twenty years and is caused by an underlying trophoneurosis, then, in order to institute any effective therapeutic treatment, a thorough study, not only of the individual, but also of his secretions is absolutely essential.

You state that “several of the best clinicians in the United States” have been consulted, but that not one of them has been able to do good. Also, you say that the patient’s general condition is excellent. However, there must be present *some* discoverable disorder of metabolism, even though the ordinary laboratory tests have discovered no aberrations.

Consequently, before we can venture any definite suggestions, we must have an answer to the following questions and be favored with as complete a clinical picture as possible: (1) What is the age of the patient? (2) What is the sex? (3) On what ground is the existence of a basal trophoneurosis diagnosed? (4) What area of the face is involved? (5) What is the nature of the eruption? (6) Does the condition partly disappear at any time? (7) Is pruritus increased by exposure to heat or cold? (8) Is there any neuralgia?

It is a very difficult matter, of course, to decide whether such an eczema is to be regarded as a catarrhal inflammation of the skin, with or without a secondary infection (usually staphylococcic), or whether it is an evidence of primary nerve involvement.

As you are aware, a neurotic or trophoneurotic basis of the pathologic changes still has many supporters. On the other hand, many competent dermatologists assert that nerve changes are wholly secondary.

As we have often pointed out, eczema is a protean disease, in which correct systemic treatment is absolutely essential. Local medication applicable in one form often is useless or even injurious in another. Always the most thorough elimination and maintenance of therapeutic cleanliness of the intestinal tract, careful dieting, and tonic alteratives are necessary.

It has been found that echinacoid and irisoid, in alternation with arsenic in some form (the most effective preparation, in our estimation, being liquor arsenii compound, Barclay), when taken for somewhat prolonged periods, frequently will produce results after all other remedies have failed. Staphylo-albus or staphylo-bacterin-mixed usually markedly allays the inflammatory conditions and, if continuously used over a period of some months, frequently will relieve even the most chronic cases.

QUERY 6271.—“Persistent Edema of Feet.” J. A. H., Arkansas, requests advice in the case of a girl, 9 years old, who has had swollen feet for ten months. He has tried all ordinary remedies designed to remove the fluid, but without avail. The girl has been twice presented at the county-medical meetings, but, while some urinary tests have been made, the cause of the trouble has not been ascertained.

We hardly need tell you that, in order to proceed intelligently, we must have a clear

idea of basal conditions. The edema probably is of cardiac origin. Thorough examination of the urine may reveal a nephritis. The following questions suggest themselves: Has this child had scarlet-fever or any other serious disease? What is the pulse rate, the blood pressure? Are the heart-sounds normal? Is there anemia? What is the character of the edema? Is there distinct pitting upon pressure? Does the condition disappear when the limbs are elevated. or is it reduced by free purgation or the administration of such drugs as digitalin and sparteine?

When answering these questions, you should also submit a 4-ounce specimen of urine (with all the usual data), when we may be in a better position to serve you.

QUERY 6272.—“Grinding of Teeth During Sleep.” R. W. G., Massachusetts, has under treatment a man of 21 years of age who “grits,” or grinds, his teeth during sleep. He asks suggestions for treatment.

Grinding, or “gritting,” one’s teeth during sleep evidences, as a rule, the presence of intestinal parasites (usually lumbricoids) or indigestion. It is quite probable that this young man eats his heaviest meal late in the evening or even, perhaps, goes to the ice-box and takes a “cold snack” just before retiring. The following course may be tried:

Thorough elimination, preferably with small divided doses of calomel and podophyllin repeated every second or third night, this followed by a saline laxative the next morning. Also, assisting digestion by means of, say, papain, 1 or 2 grains taken after meals. Of course, the diet must be regulated. Also, the skin kept active by means of salt-sponge-baths, and the young man be instructed to exercise briskly a few minutes before going to bed.

Other factors may enter into the case, and we not only should investigate the patient’s physical condition, but also his habits, for example, he may be smoking excessively.

We suggest that you send to a competent pathologist a specimen of the patient’s feces and 4 ounces from the 24-hour output of urine (stating total quantity voided). In a large number of these cases a marked auto-toxemia obtains.

QUERY 6273.—“Bacterins in Measles.” C. F. B., Missouri, writes: “I was much interested in Candler’s article on measles, published in *CLINICAL MEDICINE*, but was

equally surprised as well as disappointed that it made no mention of the use of vaccines or phylacogens, either prior to eruption or during its course, to render the infection milder and prevent or mitigate complications.”

The query-editor is not in position to advance an opinion as to the value of vaccines in measles, still, in his estimation, it would be absolutely impossible to administer intelligently a bacterin when we are entirely unfamiliar with the infecting microorganism involved. Pneumo-bacterin or pneumo-combined-bacterin may be given if pulmonary complications develop. So, a’so, of course, if any other definite infection is present, the appropriate bacterin—stock or autogenous—should be used. We should very much like to know the particular vaccine you have found useful.

QUERY 6274.—“Cholecystitis and Auto-toxemia.” T. H. S., Texas, sends for examination the urine of a woman who has gone the rounds of the doctors for the past six years. “Her normal weight is 125 pounds; present weight, 106 pounds; body fairly well nourished. Has blue eyes. Eats well, but food stagnates in the stomach, causing pain; but she does not vomit. The pain points at about 4 inches below the right nipple. Tongue is pointed, with red tip and edges, strawberry papillae, a light coat at times at base and center. Always is constipated, and uses epsom salt and enemas to move the bowels. Is nervous; skin is muddy; perspires at night; perspiration is foul-smelling and sticky; in daytime, there is no fever at intervals. There appears to be an enlargement in the region of the gall-bladder (seemingly fluid) that pushes over toward the stomach. She never used alcoholics. Lungs and heart are normal, although during the paroxysms of pain that occur about every two to six weeks the heart action is accelerated. No edema in feet or abdomen.

“I have put this patient (temporarily) on bilein, 1 grain one hour after meals; sodoxylin, 5 grains every three hours; and an active pill containing 1 grain of calomel, when a purgative is needed.

“I have my mind made up about this case, but want to get your opinion as well, as she is a woman not yet quite thirty years of age and has four children, the last one born about one year ago. Her menses now are irregular, too profuse, and last from six to nine days. In general, the genitourinary organs are in good condition. She objects to any operation. There are no symptoms of

pus formation, as yet. What about sodium succinate?"

Your patient certainly suffers from a bad autointoxication, in addition to the local condition that seems to have its seat in the gall-bladder. As to the latter, we suspect dilatation, and we doubt whether you will be able to secure drainage without resorting to an operation. However, since you desire to continue medical treatment for the present, your first attention will, naturally, have to be given to a thorough cleaning out, in order to relieve the autointoxication that is so very manifest in the appearance of your patient.

It will be well to start your patient on broken doses of calomel (1-10 to 1-6 grain) every half hour or hour, until 10 doses are taken, and a laxative saline next morning upon arising. Instead of bilein, which you have given alone, we should prefer a combination of bilein, pancreatin, and sodium sulphocarbolate, starting with one tablet half an hour after meals. Sodium succinate probably will do well if given before the noon and evening meals.

The diet should be simple, of sufficient bulk to produce fairly copious stools and, for the present, of low protein content; in other words, permit only a small helping of meat once a day and not more than one egg a day. Direct your patient to drink freely of milk or buttermilk, together with galactenzyme tablets. Let her eat vegetables, preferably of the coarse varieties (turnips, beets, young cabbage, carrots), and fruit (not including bananas). Stewed prunes will be of value and may be prepared with the addition of a little senna.

After you have secured free elimination, it will be well to accustom your patient to get along without her "drug-crutches," upon which she, undoubtedly, has depended altogether too much for the last six years. Of course, this cannot be done in the course of a few weeks or even months, and your patient must understand that she will have to continue under treatment for a considerable period of time and obey orders throughout.

After free and efficient elimination has been secured, we should put this patient on the sulphocarbolates, and give just enough of hepatic stimulants to enable the liver to function freely. It is quite possible that there is retention of bile. (You do not mention whether there are any symptoms of jaundice.) In the presence of visceroptosis, a well-fitting abdominal bandage may be of great assistance.

When you can let up on some of the drugs that you have to give at first, a tonic—pre-

ferably the arsenates with nuclein—will be useful. In addition to this active treatment, we would suggest some gentle hydrotherapeutic measures, associated with moderate exercise, preferably walking, provided this does not fatigue your patient too much. Let her spend as much time in the open air as possible and let her sleep outofdoors.

Try and have her get along without the enemas, which are vicious, unless they are given in the right manner. If an enema is necessary, it should be given with the patient in the knee-chest position or in an exaggerated Sims' position. However, very often a small injection of olive-oil will be all that is necessary to empty the rectum and lower colon.

We anticipate that you will have a good deal of trouble with this patient and that, after all, you may be obliged to drain the gall-bladder. We hope, though, that persistency in your supervision and strict obedience on her part will enable you to restore her to health.

QUERY 6275.—" 'Rheumatism,' and Specific Treatment." J. L. H., Kentucky, reports the case of a man 23 years of age (single, professional athlete and baseball-player) who is very conservative in the use of alcoholics, and whose family and personal history is negative so far as venereal diseases and tuberculosis are concerned. "The pathological process manifested itself in pains and soreness in feet and ankles and became so intense that he was obliged to refrain from ballplaying. During this time, he was being treated by a very competent physician, with whom I am well acquainted. The patient's condition gradually grew worse and, his right knee, as also his hands and elbows, becoming swollen and very tender, he took a course at Hot Springs, but without deriving any perceptible benefit. After that he consulted me, and a diagnosis of articular rheumatism was arrived at by me.

"At this time, the patient could not turn himself in bed without assistance. I began treatment by giving 1 grain of calomel, hourly, for four doses, followed by a laxative saline three hours later. Then I began to strike at what I thought to be rheumatism, by prescribing salicylates, iodides, aspirin, and the like, but without avail. Soon his stomach began to rebel against these remedies. Still clinging to my diagnosis, I gave rheumatism phylacogen for three weeks, also without achieving results whatever. This put me to studying.

"The man's hands, elbows, and right knee became very sore in spots and fluctuations

was perceptible. I incised these fluctuating areas, and a dark mass of coagulated blood and a sanguinopurulent fluid were discharged. After these incisions, extremely indolent ulcers formed, which refused to heal. A course now with mixed infection phylacogen remained without results.

"Then I concluded that my diagnosis was wrong and had a Wassermann test made, and this was positive. Ten percent inhibition of hemolysis, which was very weak, positive reaction. In the meantime, I also executed Von Pirquet's test for tuberculosis; which, however, proved negative.

"I now gave 6-10 Gram of neosalvarsan, intramuscularly. At the expiration of one month, the patient could get out of bed without assistance; the ulcers, though, healed very slowly. At this time, I gave a second dose of 6-10 Gram of neosalvarsan, which produced considerable reaction, both local and constitutional. The ulcers now were almost entirely healed, except one about the knee. I also followed this treatment by intramuscular injections of red mercuric iodide. He has gained about 20 pounds in weight in three months, has a good appetite and sleeps well, but still has a large boggy swelling in his right knee.

"I offer this case to the reading physicians of CLINICAL MEDICINE, in the hope that someone may enlighten me in regard to further treatment."

While it is possible, of course, for a man to contract syphilis and not know it, the fact that the Wassermann test was positive (provided it was made by a reliable pathologist), coupled with the further fact that specific treatment materially improved the condition, leads us to believe that you have presented another illustration of the fact—now almost universally accepted—that all venereals are, to say the least, "forgetful." Sodium cacodylate and arsenic iodide, taken in alternation, probably would prove of service, together with the local use of iodine by means of cataphoresis. Irisoid, stillingoid, and echinacea also could be administered with advantage. Do not forget the utility of dry heat in such cases.

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 QUERY 6276.—"Bacterins in Pneumonia." L. F. P., Massachusetts, desires information relative to the use of bacterins in pneumonia.

Each ampule (1 mil (Cc.) of pneumococcus-bacterin contains approximately 100,000,000 killed pneumococci of type I, II, and III; but none of the type IV, or heterogenous group of pneumococcus, are included, owing

to the fact that strains of this type belong to the common, so-called saprophytic pneumococcus, a species constantly present in the throats of many persons, although rarely causing pneumonia. Attacks that are caused by this latter type but rarely end fatally. Approximately 80 percent of all cases of pneumonia are caused by the first three types above enumerated and included in this bacterin; while 90 percent of all the deaths occur in those cases in which this group predominates.

For immunization, pneumococcus-bacterin may be used with considerable success. The first dose should be 100,000,000 killed bacteria; the second dose, 250,000,000; and the third dose, 500,000,000. An interval of seven days should elapse between doses. This ordinarily is sufficient. Nevertheless, it is highly advisable to give more than three doses, if practicable.

For the treatment of pneumonia, this bacterin is particularly useful if used early. From 25 to 50 million (that is, 1-4 to 1-2 mil—preferably 1-4 mil) may be administered every eight or twelve hours, until the crisis has passed.

Of course, this bacterin is only of value in the treatment of lobar pneumonia due to the true pneumococcus. It will not avail in bronchial pneumonia or in lobar pneumonia caused by organisms other than pneumococci.

In bronchopneumonia, bronchitis, acute rhinitis, otitis media, mastoiditis, tonsillitis, severe colds, and the usual sequels of lobar pneumonia, the pneumococcus-combined-bacterin will assure better results.

Of course, it is highly essential that the customary medication—eliminative, tonic, supportive measures especially aimed at the prevention of cardiac failure, and the like, be not neglected.

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 QUERY 6277.—"Bedbug Exterminators." B. C. S., Michigan, writes as follows: "Since more recent researches have added the 'domesticated' bedbug to the growing list of creatures disseminating disease-germs, while the family doctor is the natural adviser, in his community, on all matters relating to human well-being, I am desirous of learning of some reliable method for ridding a house of that pestiferous (literally pest-bearing) night-prowling blood-sucker. Will you kindly tell me of ways, simple, economical, reliable, and adapted to any kind of people and circumstances?"

The Doctor is right; but this matter should concern every active practitioner, hence, the

answer fitly may find room in this Department. Indeed, as our correspondent indicates, the doctor ought not to leave this problem in the hands of each citizen to solve for himself, nor wait until asked for information, but he should constitute himself a sanitary committee of one and volunteer the advice among his patrons—yes, he might not ineptly write brief articles (signed) for the newspapers serving his district. Of course, he need not confine himself to the bedbug alone, but all the disease-breeding insects and “varmints” could profitably be taken up, one by one, according to their season, so far as this may be practicable. Furthermore, the personal “publicity” feature could at the same time be enhanced by chopping up a given subject into short, natural divisions (e. g.: zoology, history, mode of infection and pathology, methods of eradication, etc.); a plan that would profitably serve to repeat the signature, while the readers will be more likely to study the article and be more impressed than by a long-drawn-out exposition.

In answering our correspondent, we first reproduce several formulas for bug exterminators, together with the introductory remarks, as we find them in that excellent and useful collection, “The New Standard Formulary,” by Hiss and Ebert (Chicago: G. P. Engelhardt & Co.—\$5.00); which, however, we have modified in part.

The number of “cures” for bedbugs [to quote] is almost legion, but the following are some of the more important substances employed for their extermination: Oil of turpentine, kerosene, benzin, mercuric chloride, mercury, paris-green, zinc chloride, arsenic, Persian insect-powder, Scotch snuff, capsicum, naphthalin, camphor, sulphur fumes, ammonia vapor, hydrocyanic-acid vapor, soft soap, carbolic acid, colocynth, wormwood, aloes, pepper, sodium borosalicylate, cimicifuga root. Also, to be placed beneath the mattress, fresh sprays of strongly scented plants, such as ledum palustre, pennyroyal, tansy, pine, and the like. Some of the powders are blown from insect-bellows, others are made into a paste and forced into the crevices. Substances like aloes, resin or bichloride are dissolved in appropriate fluids.

Kerosene, benzin, volatile oils, and other like substances, act by dissolving the chitinous coating of insects and cause death by obstructing their breathing-pores. The resinous substances act largely by cementing over the eggs and in that way prevent their hatching. The bitter substances mentioned usually are deadly to insect-life.

Liquid exterminators may be applied by means of a brush or feather, but this is very wasteful. A much better method is, to employ a machinist’s oil-can or a bottle with a perforated cork in which is inserted a quill. Corks perforated and provided with a tin spout can be purchased now. A long-nozzle glass or hard-rubber syringe also serves excellently.

One of the most commonly used bedbug exterminators is the following:

1. Corrosive sublimate.....av. oz. 1  
Alcohol.....fl. oz. 32

Some of the alcohol is replaced by water; but, inasmuch as it is the alcohol, and not the mercuric chloride that now is presumed to be the active insecticide, this replacement is not recommended. A very common practice is, to replace a portion of the alcohol (from 20 to as much as 80 percent) by oil of turpentine. This does not seem rational; for, this reacts with the corrosive sublimate, precipitating the latter. Oil of turpentine alone is an excellent bedbug destroyer. The alcohol may also be replaced by wood-spirit or denatured alcohol, if the bad odor is not objected to.

Other favorite combinations are as follows:

2. Corrosive sublimate.....av. oz. 1  
Wood-spirit.....fl. oz. 24  
Oil of turpentine.....fl. oz. 8  
Oil of cedar.....fl. oz. 1  
Dissolve the corrosive sublimate in the alcohol, then add the oils.
3. Corrosive sublimate.....drs. 2 1-2  
Ammonium chloride.....drs. 5  
Decoction of quassia (1 : 20).....fl. oz. 32
4. Corrosive sublimate.....av. oz. 1  
Ammonium chloride.....av. oz. 1  
Soap (common kitchen or soft).....av. oz. 1  
Water, enough to make.....fl. oz. 32

Dissolve the two salts in a portion of the water, the soap in the remainder of the water, then mix the two liquids. Green (soft) soap may be used. A portion of the water may be replaced by oil of turpentine or kerosene, or it may be entirely replaced by decoction of quassia or of white hellebore. Paris-green or london-purple may be added to the mixture, if desired.

5. Naphthalin.....av. oz. 1  
Gasolin.....fl. oz. 16

This is efficacious; but it is dangerous, on account of its inflammability. This solution may be used indiscriminately on bedding, furniture, textiles of every description, wallpaper, and the like.

The foregoing may be improved by adding to it 1 ounce of resin or paraffin, which serves

to form a coating over the bedbug-eggs and thus prevents their hatching out. Of course, such addition no longer leaves the solution harmless for those materials just enumerated, since the resin and paraffin will leave nasty spots.

The following specific remarks are based, largely, upon the personal experience of this writer, who for many years was connected with the drug business and pharmaceutical journalism.

First and above all for the eradication of bedbugs—precisely as in the case of cockroaches—comes a ceaseless warfare; and that same vigilance must be kept up after not a one of the “enemy” is left in the building. All beds must be completely taken apart several times a month and every fold, seam, and crevice searched or soused with the death-dealing fluid; being sure to turn the bed-ends upside down and pouring of the fluid into the underside panel-joints, as also into the caster-holes. Similar treatment must be accorded all upholstered and joined furniture and boxes; not forgetting wall-pictures and bric-a-brac, closets and garments.

Furthermore (and here most “crusaders” utterly fail!), frequent attention must be paid to the walls, the foot-boards, door- and window-casings, in fact to all woodwork, including even the floors. (In old neglected frame houses, bedbugs often infest the ceilings, and this writer has *seen* them (in a now defunct charitable institution) deliberately to walk up toward a person in bed or seated on a chair and drop straight down upon the intended victim.) It seems unbelievable, but so beastly indifferent some people—many native Americans at that—will become to these nasty predatory house-pests, the cockroaches, bedbugs, and ants, that when their homes, aye, tables, literally swarm with them, they will not move a finger.

As to the walls and partitions: The bugs hide under the wall-paper wherever that does not adhere snugly; such defects must be remedied. It is best to remove all old wall-paper, and then treat the bare surface with glue water to which mercury bichloride has been added or with a cheap paint, this, in order to destroy any eggs present. The new paper must be laid on tight, and the paste also might contain some bichloride.

As already stated, either alcohol or benzin (or kerosene) will kill the bugs, and these are the simplest and best to use; only the serious objection is, the costliness of grain-alcohol and the inflammability of gasolin. However, in the hands of cautious persons,

there is little danger from gasolin—perhaps this writer was the first one to use it for house-pests, beginning at the time Chicago burnt down. Neither of the two, however, destroys the eggs.

There is no special virtue in dissolving corrosive sublimate in alcohol (and it's foolish then to add water), inasmuch as alcohol kills, while the action of the mercurial is problematic. There is less sense in adding to the foregoing oil of turpentine; for, the latter by itself also is destructive, while in this combination it is decomposed and the mercury is precipitated out in the form of some insoluble white sediment; moreover, a nasty resinous odor is generated in the reactions. But, the plain terebintine odor militates against oil of turpentine, and, also, it leaves resinous spots, if not freshly distilled, and may attack polished surfaces. Good lamp-kerosene probably is just as effective, while its odor is less unpleasant and persistent; it also leaves less residue and does not attack polishes. For commercial purposes, all the different simple liquids may readily be colored (very slightly!) and disguised with a cheap odorous volatile oil.

An old favorite bedbug eradicator is diluted mercurial ointment, smeared into corners of bedsteads and so on. It serves the purpose, and also kills the eggs reached by it, but it is a nasty greasy mess, and it cannot be generally applied. (Making it into a thin cream with a little kerosene or oil of turpentine facilitates its distribution.) Similar objections apply to the vegetable decoctions, which, by the way, are relics of an unscientific age. Though possibly inexpensive, the poisonous arsenical compounds can be mentioned only to be condemned. Persian insect-powder is not very effective against bedbugs, while, exposed to the air, it quickly loses its virtues and thus creates a false sense of security, besides adding to its costliness. The scented herbal inlays are an excuse for the lazy housewives. Hydrocyanic vapor can be employed only by expert sanitarians for clearing entire buildings; it is difficult and too dangerous to “monkey” with.

Using due diligence, no special treatment really need be given the bedbug-eggs; for, killing off the “live stock,” the youngsters will get little chance to grow to maturity, so that the colonies soon will be decimated. As stated in the beginning, to kill the eggs, some glutinous liquid—varnish—may be applied over the woodwork, which prevents hatching out.